

# **Proudly Rooted in TUMS**

Selected Spinout Companies From Tehran University of Medical Sciences



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Selected Spinout Companies From Tehran University of Medical Sciences

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# **Products and Companies**

Tehran University of Medical Sciences

# Knowledge-based companies stemming from the university ...

The history of science in Iran has a long life and background and the power of medical knowledge in this land is as high as its rich history. 1700 years has been elapsed since foundation of Jundi Shapur School of Medicine. Tehran University of Medical Sciences (TUMS) as the oldest and highest center of modern higher education in the country and the largest University of Medical Sciences of Iran is the inheritor of this invaluable history. We take pride in announcing that in the current year, whilst we celebrate the beginning of the eighth decade of its establishment, TUMS has prospered in gaining the most coveted distinguished scientific levels across the country, the most prominent of which is being awarded the title of the country's best university of medical sciences.

To develop its medium and long-term plans and move towards the universities of the third millennium, TUMS has taken huge steps towards production of technological products in various fields of medical sciences. Many of the products produced in developed centers and knowledge-based companies and technology centers of the university are benefitted from high technological levels and have been marketed both nationally and internationally. Proudly, these products have received appropriate and positive feedback from customers domestically and internationally.

With that said, TUMS aims to introduce a number of products and promote capacities and competence of its knowledge-based companies in order to pave the way for further international interactions and technology transfer. It is hoped that through comprehensive interaction and collaboration in research, modern technologies provide more beneficial advantages to the people all around the world.

Mohammad Ali Sahraeian, M.D., Ph.D. Vice Chancellor for Research and Technology, Tehran University of Medical Sciences



# Internationalization of the university is the key to success ...

In the global arena, internationalization of education and research is the core necessity of today's world science, and it is crucial that academic research lead to internationally recognized products. This is tuned with the view of the complementary role of universities and industries, and the need to achieve desired levels of standardization to reach the international market. In particular, internationalization of modern products and technologies can claim our high position in the world of science. This ultimately leads to development of the country in various areas including but not limited to science, trade, finance, national development, etc. This requires coordination, interaction and balance between different scientific, commercial, financial, industrial processes that finally will result in advancing the ability to produce new technologies and create innovative products. Last but not least, academic research and developed technologies, followed by wealth, are among the most effective ways to maintain creativity in academic elites.

The present booklet aims to introduce products that were developed by faculty members of Tehran University of Medical Sciences to the international community. It is obvious that internationalization of these products can be a major contributing factor in the development of the private sector and ultimately, the advancement of the relationship between the university, the industry, and the world.

Ramin Kordi, M.D., Ph.D. Vice Chancellor for International Deputy, Tehran University of Medical Sciences



# High quality products, proudly made in TUMS ...

The present collection aims to introduce selected companies and products that have been developed and manufactured by some of the finest faculty members in Tehran University of Medical Sciences (TUMS). By overcoming countless challenges, the distinguished scholars behind each of these products have been able to lead their professional knowledge and academic research to wealth, and consequently provide alternatives to imported goods in the medical field. Some of these products are not only being sold across the country but are available in the international market as well. In fact, the main goal of this compilation is to proudly introduce some of the companies and the high-level products that have originated from the heart of TUMS to the international arena. We hope that this effort leads to a better recognition of the companies in the global market.

Mohammad Reza Monazzam, Ph.D. Director of Industrial Relations Tehran University of Medical Sciences



# **Traditional Medicine and Natural Products**

Bonyan Salamat Kasra
Daya Darou Research and Development
Gostaresh Milad Pharmed
Araz Pishgam Parsi
Zist Mabna Exir (BioMabEx)
Keydaru Fanavari Salamat



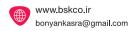
#### Bonyan Salamat Kasra



# **Bonyan Salamat Kasra**

As a knowledge-based spin-off company, Bonyan Salamat Kasra started its activities in the Faculty of Traditional Medicine, Tehran University of Medical Sciences in 2014. The company has since managed to register several natural and chemical formulations in the Food and Drug Organization of Iran. We provide a full line of herbal extracts, vitamins, minerals and special ingredients for weight loss, sport supplements, diabetic foot medications and functional formulations designed for today's lifestyles. There are also several products which are under investigation will be available soon. As a pharmaceutical company which is certified as an organic ingredient producer, our constant pursuit for quality is evident in our products. We offer an extensive range of health-promoting products that have been carefully scrutinized and tested, since all while adhering to Good Manufacturing Practices, we can guarantee them to exceed costumer expectations.







No w, Farjam St, Resalat Sq, Tehran ,Iran 1683848411

Bonyan salamat Kasra

# **Products:**

#### RegraHeal®

REGRAHEAL® Gel contains becaplermin, a recombinant human platelet derived growth factor that is indicated for healing lower extremity diabetic neuropathic ulcers. Becplermin, which is produced by recombinant DNA technology, is the only topical medication approved by the Food and Drug Administration (FDA) for healing diabetic foot ulcers. REGRAHEAL® (becaplermin) Gel is indicated for healing of lower extremity diabetic neuropathic ulcers that extend into the subcutaneous tissue or beyond and have an adequate blood supply.

#### Green Coffee BSK®

Green coffee BSK® consists of green coffee bean extract that contains more than 50% chlorogenic acid and low caffeine, and can decrease body weight securely by exclusive mechanisms. Green coffee bean has strong antioxidant properties that reduce free radicals induced oxidative stress. Reduction in the absorption of glucose in the intentine, inhabiting the enzymatic activity of hepatic glucose-6-phosphatase, suppressing the accumulation of hepatic triglycerides and downregulating fatty acid and cholesterol biosynthesis and upregulating fatty acid oxidation are the main green coffee mechanisms of action.

#### Garcinia Cambogia BSK®

Garcinia Cambogia BSK® contains Garcinia cambogia extract, which is derived from a tropical fruit that has great reputation because of its effective role in weight loss and body fat reduction. The active ingredient of this extract is hydroxycitric acid (HCA) which acts as a natural appetite suppressant without any cerebral complications. It enhances the ability of the liver and muscles to store glycogen, thereby the full signal can be sent to the brain. It also prevents the conversion of excessive energy into fat by inhibiting enzymes which convert carbohydrates into fat. Along with a healthy diet and exercise this product was designed to enhance weight loss and reduce body fat.

#### Green Size®

Green Size® is a weight loss supplement, which contains 30 packets and there are 3 tablets in each packet (total of 90 tablets). Cream tablet: Green Coffee bean extract 400 mg. Red tablet: Acetyl-L-Camitine 250 mg, 7-Keto DHEA 50 mg and Chromium picolinate 0.5 mg.

Green tablet: Garcinia Cambogia extract 400 mg, Acetyl-L-Camitine 150 mg and Raspberry Ketone 50 mg. Green Size is effective in reducing fat storage, decreasing the absorption of sugar and fat, reducing appetite, increasing metabolism of fats and preventing the conversion of excess energy to fat.

#### KiD3 BSK®

KiD3 BSK® is an oral drop for infants and children, which contains 400 IU Vitamin D3 in each ml. Cholecalciferol (Vitamin D) is a fat -soluble vitamin, which is essential for bone health and enhances the absorption of calcium in the gut and bones. Infants and children need high amount of Vitamin D because of physiological status of growing and low level of vitamin D in breast milk, so providing enough Vitamin D is essential for them.

#### KiD3 Fort®

KiD3 Fort® is an oral drop, which contains 12000 IU Vitamin D3 in each mI (400 IU in each drop). Cholecalciferol (Vitamin D) is a fat -soluble vitamin, which is essential for bone health and enhances the absorption of calcium in the gut and bones. Vitamin D deficiency can lead to a loss of bone density, which can contribute to rickets in children and osteomalacia in adults. Using KiD3 Fort (12000 IU Vitamin D in each mI) can effectively resolve vitamin D deficiency in children and adults.

#### SunD3®

SunD3® LIQcaps contain 4000 IU Vitamin D3. LIQcaps are liquid-filled capsules which have several benefits such as better content uniformity, better absorption and bioavailability of ingredients and improved stability of the product.

#### Colief BSK®

Colief BSK® is oral drop for infants and children, containing simethicone, dill oil and fennel oil. Simethicone lowers surface tension and when given orally causes bubbles of gas in the gastrointestinal tract to coalesce thus aiding their dispersion. This compound is used for the relief of flatulence and abdominal discomfort due to excess gastrointestinal gas in disorders such as dyspepsia and gastroesophageal reflux disease. Dill oil and Fennel oil are also useful for relieving gastrointestinal disturbances specially flatuence and colic pain.

#### L-Carnitine BSK®

L-Carnitine BSK® oral vials contain L-Carnitine in 4 different doses: 500 - 1000 - 2000 - 3000 mg. Lcarnitine plays a critical role in energy production; it transports long-chain fatty acids into the mitochondria so they can be oxidized ("burned") to produce energy. It also transports the toxic compounds generated out of this cellular organelle to prevent their accumulation.

#### L-Arginine BSK®

L-Arginine BSK® oral vials contain L-Arginine (Base) in 2 different doses: 1000 and 2000 mg. LArginine is a basic amino acid that is essential for growth. It plays a role in the formation of important physiologic factors, including Nitric oxide, urea, creatine and proteins. Nitric oxid synthase (NOS) converts L-Arginine to NO in vascular endothelial cells, which causes vasodilation. L- Arginine also contributes to increase muscle mass because it has a role in synthesis of most proteins.

#### L-Carnitine Plus®

L-Carnitine Plus® oral vials contain L-Carnitine 1000 mg + L-Arginine 1000mg. L-Carnitine plays an essential role in the metabolism of lipids and energy production in the heart, liver, and skeletal muscles. This compound leads to energy production, by transferring long-chain fatty acids into the mitochondria (the place in which the fatty acids are oxidized). L-Arginine is also an amino acid that is essential for growth. It contributes to the formation of important physiological factors such as nitric oxide (NO, a vasodilator), creatine, proteins, and the release of the growth hormone, and is effective in improving the immune system and wound healing.

#### AvoSov BSK®

A voSoy BSK® is product of herbal origina and contains avocado soybean unsaponifiables (ASU). A voSoy BSK affects connective tissue by stimulating proteoglycans and collagen synthesis. And restores normal cartilage structure. This compound can reduce pain and disability by inhibiting the production of inflammatory mediators such as prostaglandin E2 and iflammation reduction in the joints. A voSoy is produced in LIQcap form which has several benefits such as better content uniformity, better absorption and bioavailability of ingredients and improved stability of the product.

#### PvloShot®

Pyloshot® is a probiotic product containing non-viable lactobacillus reuteri with three other probiotic strains plus magnesium oxide, calcium carbonate and zinc gluconate. After entering the stomach, L. reuteri can interfere with binding of Helicobacter pylori to the gastric mucus by binding to its receptors and make it dispose through natural movements of gastrointestinal tract, thereby significantly reduces the amount of H. pylori in the stomach. The other three pro biotic strains in this product can reduce the possible side effects of H. pylori treatment (such as acute gastroenteritis and colitis caused by antibiotics). Calcium carbonate and magnesium oxide are used as an antacid in the treatment of dyspepsia and play a role in maintaining the balance of electrolytes and the natural function of digestive enzymes. Zinc plays an important role in establishing an appropriate acid-base balance.

#### LiposoFer®

LiposoFer® is an iron drop supplement (7 mg/ml) in which iron ions are carried within a phospholipid and sucrose esters of fatty acid membrane and liposomes containing iron are absorbed intact from the intestine. Iron has better stability in the liposomal formulation, since iron within the liposomal structure is easily absorbed through the intestinal wall cells, its absorption and bioavailability is also improved, and due to the lack of direct contact of ironmolecules with the gastroinestinal tract, this product does not have the common digestive side effects of iron, its bad taste and staining the teeth.

#### QIOBSK®

Coenzyme QIO is a vitamin-like substance that is essential for energy production in cells and it is present in virtually all cells of the human body. CoQIO is so important for cardiovascular function and acts as an antioxidant, which protects the body from damage caused by harmful molecules. CoQ 10 reduces levels of lipid peroxidation and thus reduces the risk of cardiovascular disease.

#### Magnetra®

Magnetra® mouth-dispersible sachets contain 300 mg elemental magnesium. Magnesium is the most found cation in the body that gives you sense of health. Heart, nerves, tissues, bones and muscles need magnesium. It has an important role in the metabolism of carbohydrates, proteins and lipids, development and maintenance of bones and teeth, formation of tissues, ion transfer in cell membranes, preservation of electrical potential and pulse transfer at neuromuscular junction and proper functioning of the muscles.





# Daya Darou Research and Development



# **Daya Darou Research and Development**

As a knowledge-based company, Daya Darou Research and Development started its activities in the Faculty of Traditional Persian Medicine, Tehran University of Medical Sciences in 2016. The company has since managed to register several natural and chemical formulations in the Food and Drug Organization of Iran. There are also several products which are under investigation and will be available soon.



Tel:+98 21 22893167 22893473

Fax:+98 21 22893497





Traditional Medicine Pharmacy and Natural Products, Giti Ave, Favamanesh, Heravi Sq, Tehran. Iran 1668753961

#### Honeyjell®

HONEYJELL® is a natural product and nutraceutical food with antioxidant properties in a dose equivalent to a dietary supplement and there is no serious concern about its interaction during chemotherapy and radiotherapy, but as a controversy it is advisable not to use on chemotherapy injection days to at least 24 hours later.

#### Ingredient:

- Royal Jelly, Jujube fruit extract and Pure medical honey
- Without added sugar
- Without preservative
- Standard on the basis of exclusive material: 10HDA

#### Indications:

- Reducing weakness and improving fatigue
- Improving quality of life in cancer patients
- Increasing physical activity
- Modulating the immune system

#### Two Randomized Clinical Trial:

1-Evaluation of effect of HONYJELL® on cancer-related fatigue: a double blind randomized clinical trial (phase III)

2-Assessing HONEYJELL® as a treatment for reducing cancer-related fatigue in breast cancer patients undergoing radiotherapy: double blind clinical trial (phase III)

#### Conclusion:

 ${\sf HONEYJELL}^{\circledcirc}$  is as an effective treatment to alleviate cancer-related fatigue among cancer patients.



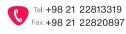


#### **Gostaresh Milad Pharmed**



# **Gostaresh Milad Pharmed**

Gostaresh Milad Pharmed was expanded and developed in 2010 at the University of Tehran in response to the needs of the country with a view to preventing and controlling diseases and improving the digestive system, immune system and reproductive system of women and children and adults.







#### Prokid®

Prokid helps maintain a healthy balance of intestinal flora that important for a developing immune system. Bifidobacteria play an extraordinary and essential role in children's digestive and immune health.

That's why Prokid founding bacteriologist has developed a new probiotic formula especially for children and infants. If infants are unable to acquire natural balances of microbial flora at birth or during breastfeeding or if antibiotics disrupt natural balances, supplementation of good flora may help establish and maintain a healthy gut repertoire. The consumption of products include:

- Adjust the balance of microbial flora of the digestive system and increase resistance to disease, intestinal kids.
- Improve the immune system and increase resistance to respiratory diseases such as colds kids.
- The restoration of the microbial flora of infants and children with antibiotics.
- · Prevent allergic reactions and allergic kids.

#### **Active Ingredient:**

Bifidobacterium lactis, Lactobacillus acidophilus, Bifidobacterium bifidum, Lactobacillus rhamnosus.

#### Prokid Pouya®

Prokid oral drops is a dietary supplement containing Lactobacillus reuteri that has been tested in a number of clinical studies and proven both effective and safe for children. The consumption of products include:

- Fixed Colic and bloating and digestive systems of infants and kids.
- Improved viral and bacterial diarrhea.
- Prevent eczema and other immune deficiencies babies and children.
- · Reduce infant crying time in infants with colic.
- Prevent and treat side effects caused by taking antibiotics.
- Improve Intestinal immune system and increase resistance to disease.
- Prevent a variety of allergic babies and children.

#### Active Ingredient:

Lactobacillus Reuteri











# Araz Pishgam Parsi



# **Araz Pishgam Parsi**

As a company, Araz Pishgam Parsi started its activities in the Faculty of Traditional Medicine, Tehran University of Medical Sciences in 2019. The company has since managed to register natural traditional Persian products in the Food and Drug Organization of Iran. A full line of natural products designed for today's lifestyles are under investigation and will be available soon. We offer an extensive range of health-promoting products that have been carefully scrutinized and tested, since all while adhering to Good Manufacturing Practices, we can guarantee them to exceed costumer expectations.





No. 35, Jamali Ave, Vafamanesh St, Heravi Sq. Tehran ,Iran

#### Phyto-Whey

Whey, which is introduced to you under the name of Phyto-Whey brand, has been prepared by enzymatic method and has been optimized to be dried with a high solubility powder and more durability by optimizing drying by spray drying. The content of between 8 and 10% of its protein, which is mainly serum milk proteins (such as alpha-lactalbumin, beta-lactoglobulin), provides abundant amino acids cysteine and tryptophan to the body. The design of the Phyto-Whey group is based on the simultaneous use of herbs and the desired extracts of medicinal plants in the final formulation, and there are currently three products of this product available.

DODDER WHEY: (8.5+-1% whey proteins / 2.5% Cuscuta epithymum powder-water soluble powder)

- · Moisturize the body
- · Improve sleep and reduce stress
- · Improve skin complications

LIQUORICE WHEY: (8.5+-1% whey proteins / 2% Glycyrrhiza glabra extraction powder- water soluble powder)

- · Improve liver function and preventing the complications of metabolic diseases
- · Improve gastrointestinal spasms

CHICORY WHEY: (8.5+-1% whey proteins / 2% Chicory intybus powder- water soluble powder)

- · Blood purifier and analgesic
- · Helps regulate gastrointestinal microbial flora due to high inulin content (prebiotics)

#### Organon collection

In this collection, "Monzej Ghalam" is designed to mature the mixture of concentrated, viscous and compound humors, "Moshel Ghalam" for laxative effect and "Mofarah Zat" is essential for prescribing at rest intervals. In making these products, in addition to providing medicinal plants with the assurance of the appropriate type and quality in terms of active ingredients, the use of these plants in the appropriate syrup and observance of manufacturing principles based on traditional medicine and pharmaceutical principles and optimal conditions and manufacturing standards are also considered.

Mofarrah Za't: (Coriander fruit, Orange peel, Lemongrass, willow, Cardamom, Quince, Saffron - syrup)

- · Moderate mood and soul
- · Strengthen the heart, brain and stomach
- Excretion of soda

Monzej Ghalam: (Licorice, Fenugreek seed, Common Mallow, Green tea, Aniseed-syrup)

- The inner and outer organs of the body
- Excretion of bile and soda and phlegm (abnormal and compound) from the gastrointestinal tract and lungs
- · Brain temper modulator

Moshel Ghalam: (whey protein, Dodder, Senna, Rosa damascene-water soluble Powder)

- laxative
- · Brain detoxifier
- · Injustice in softening and defining the dams
- · Moisturize the body
- · Improve sleep and reduce stress
- · Improve skin complications



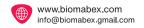
# Zist Mabna Exir (BioMabEx)



# Zist Mabna Exir (BioMabEx)

Zist Mabna Exir (BioMabEx) Co., consists of best expertise in Phytochemistry, Biomedicine and Biotechnology has been started up in order to produce herbal supplements and natural products mostly for Quality Of Life (QOL) improvement of cancer patients. Our products are not only limited to QOL products but also to provide international producers with herbal extracts and high-tech production of processed and row natural and herbal materials. In this criterion we followed a research line into a spinoff to provide a special high saffranal-crocetin Saffron extract for pharmaceutical purposes by achieving European and North American quality requirements for demanded companies. Also, specified chemo-analytical methods have been developed for categorization and academic quality control of some natural materials such as natural honey and essential oils. By using this protocol, the exact origin of honey, the number of herbal metabolites and therefore herbal sources of feeding as well as several kinds of contaminations which are not measurable in common QC processes of honey, has been designed and developed. Beside our mission in production of high-quality herbal supplements inside the Country, our main vision is to improve international trade of processed natural products instead of raw marketing of our glorious reservoirs of Iran.







No. 67, west Davood Jamali St, Sayyad Shirazi highway, Tehran, Iran

#### **Pemelex**

Pemelex syrup has been developed based on an Iranian traditional medication and contains natural organic wine vinegar, natural organic multi flower honey as well as 0.1% (w/v) natural peppermint essential oil. Pemelex relieves reflux and post chemotherapy Gl complications such as bloating, hyperacidity, Gl upset and improves appetite.

#### INCI:

Organic wine vinegar

Organic multi flower honey

Peppermint essential oil (0.1 w/v)

Polysorbate 80

Pementex

Pementex drops contain natural peppermint essential oil extracted from organic Mentha piperita leaves. Topical use of Pementex would reduce CINV and relieve headache and sinusitis.

#### INCL:

Hydroxyethyl cellulose (HEC)

Polyethylene glycol (PEG)

Peppermint essential oil (10% v/v)

Onconabis

Onconabis CBD drops contain organic cold pressed olive oil and verified extracted cannabis resin from selected organic farmers in the region of Croatia. Our active ingredient has been extracted by using Co2 super critical method and has a full spectrum range of all cannabinoids and terpenes as well as other metabolites of classified therapeutic Cannabis sativa. Onconabis CBD drops (5% CBD) contain only natural ingredients and no artificial colors or preservatives added. This product was tested on humans only. CBD products has been endorsed by ASCO for CINV and many other side effects of chemotherapy in cancer patients. Also, it can improve sleep quality and reduce arthritis and joint chronic inflammations as an OTC herbal supplement.

#### Ncl:

CANNABIS SATIVA L. OLEA EUROPAEA. MENTHA PIPERITA.



# Keydaru Fanavari Salamat



# Keydaru Fanavari Salamat

Producing natural products based on the science of the day to increase health Producing products based on Iranian traditional medicine







Keydaru Fanavari Salamat

# **Products:**

# ZINOGAN

Healthy aging and longevity



#### MOOTTA

A promising natural medication for PCOS, based on clinical data



# Also in this category, companies that will be presented in the future version of this catalog are:

- 1 Arman Tandorosti Nikan
- 2 Saha Farmed Parsian
- 3 Ramona Darou
- 4 Exir Tabiat Zagros
- 5 Rama espa
- 6 Maham andishan abadis
- 7 Yas Darou
- 8 Hamrah zendegi salamat
- 9 Exirlranian
- 10 Hekmat Pajohan Salamat Negar
- 11 Darouteb
- 12 Salamat gostar iersa Darou

# **Pharmaceutical Products**

Darou Pajouhan Pasargad

**Zist Takhmir** 

Jarf Andishan-e Navid-e Salamat (JANUS)

**Pooyesh Darou** 

Nano Daru

**Pars Pharmed** 

Saman Daroo

Fara Darou Fanavar mehr

**Fanavaran Darouie Parsian** 

NanoAlvand

Noavaran Daroui Kimia

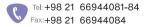
**Huber Darou Gostar** 

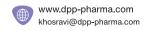
# Darou Pajouhan Pasargad



# Darou Pajouhan Pasargad

Darou pajouhan pasargad is an international pharmaceutical company focused on improving patient's lives by identifying, developing, and commercializing meaningful products that address unmet medical needs. We have a diverse portfolio of products and product candidates, with a focus on the Osteoarthritis, Oncology, Contrast Media and Cardiology. We also support commercial products in other therapeutic areas where we can meaningfully address serious medical needs.







PSCLETONE 300 mg pscleton 300 mg is commonly used for treating the symptoms of osteoarthritis. The drug relieves the symptoms of degenerative articular cartilage damage, including pain and consequently improves the patient's locomotive.

PSCLETONE PLUS pscleton plus improves tropism of connective tissue components. Rheumatology: symptomatic slow-acting treatment of hip and knee osteoarthritis. Dentistry: supplementary treatment of periodontal.

#### lohexol

lohexol (trade name: omnipaqueTM or exypaque) is a commonly used non-ionic water-soluble iodinated contrast agent for CT scan. Like other conventional contrast agents, lohexol can cause some adverse effects such as CIN on patients.

#### Gadodiamide

Gadodiamide is a gadolinium-based MRI contrast agent, used in MR imaging procedures to assist in the visualization of blood vessels. It is commonly marketed under the trade name Omni scan.

Anionic linear globular dendrimer anionic linear globular dendrimer G2 is able to deliver drugs to specific tissues especially cancers. We had several anti-cancer drug delivery studies using this dendrimer with remarkable results to cure cancer.

Curcumin-conjugate G2 PEG nano-dendrimer curcumin-conjugate G2 PEG nano-dendrimer (CCND2) can increase the hydrophilicity of the curcumin as an effective anticancer, adjuvant herbal product. 2. Curcumin is lipophilic polyphenol and insoluble in water thus cellular uptake of this compound is about 1%. Curcumin-conjugate G2 PEG nano-dendrimer (CCND2) can increase the hydrophilicity of the curcumin and hence increase its absorption as an effective anti-cancer, adjuvant herbal product. Intracellular uptake was analyzed qualitatively and quantitatively with flow cytometry and suggests that the cellular uptake of CCND2 is over 80%.



#### Zist Takhmir



# **Zist Takhmir**

As a knowledge-based spin-off company, Zist Takhmir started its activities in the Pharmaceutical Incubator of the Faculty of Pharmacy, Tehran University of Medical Sciences in 2002. The company has since managed to register several probiotic formulations as well as bulk pro biotic bacteria in the Food and Drug Organization of Iran. Zist Takhmir is the leading manufacturer of probiotic supplements in Iran. There are also several chemical and natural products in the pipeline which will be available soon.



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www.zisttakhmir.com info@zisttakhmir.com



No. 597, Farjam St, Resalat Sq, Tehran ,Iran.

#### BB Care®

BBCare is a special blend of probiotics and prebiotic (symbiotic) in the dosage form of oral drops for infants and children under 2 years old. It contains high levels of beneficial bacterial strain "Bifidobacterium lactis BB-Care" with Fructooligosaccharides (contributing to the growth and activity of probiotics) and its formula is specially made for infants.

Probiotic strain and prebiotic: Bifidobacterium lactis BB-Care® (109 CFU) + Fructoo ligosaccharide

Indications: Bloating and constipation Reflux and lactose intolerance Prevention of allergies Prevention of necrotizing enterocolitis (NEC) in premature infants' Respiratory infections Boosting the immune system during seasonal outbreaks such as colds Dosage Form: 15 ml oral drop.

#### PediLact®

Pedilact is a special blend of probiotics and prebiotic (synbiotic) in the dosage form of oral drops for infants and children under 2 years old. It contains high levels of beneficial bacterial strains including infants' particular strain "Bifidobacterium infants" and "Lactobacillus reuteri" with fructooligosaccharides (contributing to the growth and activity of probiotics) and its formula is specially made for infants.

Probiotic strains and prebiotic: Lactobacillus rhamnosus Lactobacillus reuteri, Bifidobacterium infantis (109 CFU blend) +Fructooligosaccharides (FOS)

Indications: Infantile colic and bloating, Viral diarrhea, Bacterial diarrhea and Diarrhea caused by antibiotics in infants Reflux and lactose intolerance, Respiratory infections, Boosting the immune system during seasonal outbreaks such as colds Dosage Form: 15 ml oral drop.

#### KidiLact®

KidiLact® is a synbiotic (probiotic + prebiotic) formulation which is suitable for children 2-10 years old and contains high amounts of 7 safe and beneficial bacterial strains including specific strain of children, Bifidobacterium infantis, plus fructooligosaccharides as prebiotic.

Probiotic strains and prebiotic: Lactobacillus casei Lactobacillus acidophilus Lactobacillus rhamnosus Lactobacillus bulgaricus Bifidobacterium infantis Bifidobacterium breve, Streptococcus thermophilus (109 CFU blend) +Fructooligosaccharides (FOS)

Indications: Viral or bacterial diarrhea in children Antibiotic-associated diarrhea Bloating, colic and constipation Allergy and atopic dermatitis, Reflux and lactose intolerance Respiratory infections, At the time of the outbreak of infectious and seasonal diseases such as common cold Dosage Form: 15 sachets of 1 gr

#### KidiLact Zinc®

KidiLact Zinc® is a synbiotic (probiotic + prebiotic) formulation which is suitable for children over 2 years old and contains high amounts of 7 safe and beneficial bacterial strains including specific strain of children, Bifidobacterium infantis, plus fructooligosaccharides as prebiotic. It also contains essential ingredient of zinc as zinc gluconate, which is effective in the treatment of inflammatory bowel disease and diarrhea, and is useful in strengthening the immune system, bone growth and the health of children's hair, skin and nails.

Probiotic strains and prebiotic: Lactobacillus casei Lactobacillus acidophilus Lactobacillus rhamnosus Lactobacillus bulgaricus Bifidobacterium infantis Bifidobacterium breve, Streptococcus thermophilus (109 CFU blend) + Zinc (as zinc gluconate) + Fructooligosaccharides (FOS)

Indications: Viral or bacterial diarrhea in children Antibiotic-associated diarrhea Traveller's diarrhea

Bloating and constipation, allergy and atopic dermatitis respiratory infections, at the time of the outbreak of infectious and seasonal diseases such as common cold Dosage Form: 15 sachets of 1 gr.

Indications: Resolving and improving different types of diarrhea, such as acute infectious diarrhea, traveler's diarrhea, diarrhea caused by enteral nutrition and antibiotic associated diarrhea. Helping treatment of Clostridium difficile infection. Contribute to the eradication of Helicobacter and reducing side effects of treatment. Reducing symptoms of IBS and IBD. Prevention and elimination of parasitic infections such as amoebic colitis and giardiasis. Dosage Form: 30 capsules of 250 mg GLUTEN FREE

#### VitaLact®

VitaLact® is a synbiotic (probiotic + prebiotic) plus multivitamins and minerals formulation suitable for all family members and contains high amounts of 3 safe and beneficial bacterial strains plus fructooligosaccharides as prebiotic. The use of dual-layer tablet technology in the production of VitaLact® provides simultaneous use of probiotics and multivitamins. One of the benefits of using probiotics along with multivitamins and minerals is to improve metabolism, digestion and absorption of nutrients and vitamins, as well as to reduce the complications caused by the use of multivitamins and minerals. Strains, prebiotic and multivitamins/minerals: Lactobacillus gasseri Bifidobacterium bifidum, Bifidobacterium longum (109 CFU blend), + Fructooligosaccharides (FOS) Vitamins: A, B1, B2, B3, B6, B12, C. D3. KI, E and folic acid Minerals: iron. magnesium and zinc

Indications: Supplying essential vitamins and minerals, helping in digestion and absorption of nutrients, improvement of metabolism and general health, boosting the immune system and reducing the recovery period of infectious diseases. Dosage Form: 30 tablets of 1g

#### LactoFem®

LactoFem® is a special blend of Probiotics and Prebiotic (Synbiotic) for females which is enriched with lactobacillus strains specially selected for their ability to migrate to the vaginal environment. It inhibits urogenital pathogen growth and adhesion to colonize in vagina following oral intake. Thus, potentially providing a practical means to reduce the risk of vaginal and bladder infections.

Probiotic strains and prebiotic: Lactobacillus acidophilus Lactobacillus plantarum Lactobacillus fermentum, Lactobacillus gasseri (109 CFU blend)

Indications: At the time of exposure to genitourinary infections, to increase the effects of medications (antibiotics and antifungals) and help with treatment. At the end of the treatment course for re-establishing the balance of natural flora and preventing the recurrence of urogenital infections. Helping prevent and treat urinary tract infections (UTI) in girls. Reducing menopause symptoms such as flushing and vaginal dryness and helping increase vaginal discharge and prevention of UTis. During pregnancy, to prevent common gastrointestinal disorders such as constipation during pregnancy and gestational diabetes, and to reduce risk of allergy in newborns.

Dosage Form: 30 capsules of 500 mg GLUTEN FREE

#### LactoVag®

LactoVag® is a symbiotic (probiotic + prebiotic) formulation for women which inhibits urogenital pathogen growth and adhesion in vagina. Thus potentially providing a practical means to reduce the risk of vaginal and bladder infections. It contains high amounts of 4 safe and beneficial bacterial strains plus inulin as prebiotic.

Probiotic strains and prebiotic: Lactobacillus acidophilus Lactobacillus plantarum Lactobacillus rhamnosus, Lactobacillus gasseri (109 CFU blend)

Indications: At the end of the treatment of genitourinary infections for re-establishing the balance of natural flora. Preventing the recurrence of urogenital infections. Helping prevent and treat urinary tract infections (UTI). Reducing menopause symptoms such as vaginal dryness and helping increase vaginal discharge. Dosage Form: 14 vaginal capsules

#### Dr. Gumfi® (Multivitamin)

Dr. Gumfi is a combination of vitamins and zinc needed to help children grow. Vitamin B is used to provide energy and vitamins C and E, along with zinc to improve children's immunity. This product is based on Halal gelatin and made with natural color and free from wheat (gluten), milk, eggs, soy and peanuts.

Multivitamins and Minerals: Vitamin A, C, D, E, B1, B3, B6, B12, Pantotenic acid and Folic acid and Zinc. Dosage Form: 60 gummies

#### FamiLact®

FamiLact® is a synbiotic (probiotic + prebiotic) formulation suitable for all family members (10-50 years old) and contains high amounts of 7 safe and beneficial bacterial strains plus fructooligosaccharides as prebiotic.

Probiotic strains and prebiotic: Lactobacillus casei Lactobacillus acidophilus Lactobacillus rhamnosus Lactobacillus bulgaricus Bifidobacterium longum Bifidobacterium breve, Streptococcus thermophilus (109 CFU blend) +Fructooligosaccharides (FOS)

Indications: Preventing or reducing the duration and severity of different types of diarrhea, including antibiotic associated diarrhea, Clostridium difficile diarrhea, traveler's diarrhea and rotaviral diarrhea. Improving the symptoms of irritable bowel syndrome (IBS) such as reducing abdominal pain, bloating, frequent bowel movements and improving stool consistency. Reducing symptoms of IBD such as ulcerative colitis, preventing relapse of disease, and helping treat chronic paucities. Preventing and controlling hyperglycemia in people with diabetes (helps reducing fasting blood glucose and insulin resistance).

Dosage Form: 30 capsules of 500 mg GLUTEN FREE

#### GeriLact®

GeriLact® is a synbiotic (probiotic + prebiotic) formulation suitable for adults over 50 years old and contains high amounts of 7 safe and beneficial bacterial strains plus fructooligosaccharides as prebiotic.

Probiotic strains and prebiotic: Lactobacillus casei Lactobacillus acidophilus Lactobacillus rhamnosus Lactobacillus bulgaricus Bifidobacterium Iongum Bifidobacterium breve Streptococcus thermophilus (109 CFU blend) +Fructooligosaccharides (FOS)

Indications: Reducing chronic constipation in the elderly, Helping to lower cholesterol level and control blood pressure in people with cardiovascular disease ,Helping control non-alcoholic fatty liver disease (NAFLD) ,Improving the symptoms of irritable bowel syndrome (IBS) and Inflammatory bowel disease (IBD) ,Improving digestion and absorption of nutrients, improving bone markers and physical strength of the elderly ,Preventing and controlling hyperglycemia in people with diabetes (helps reducing fasting blood glucose and insulin resistance) Dosage Form: 30 capsules of 500 mg GLUTEN FREE

#### LactoCare®

LactoCare is a special blend of probiotics and prebiotic (symbiotic) for the times of extra need. It contains the highest amounts of 7 effective probiotic strains and fructooligosaccharides (contributing to the growth and activity of probiotics). This product has a protective effect against pathogenic microorganisms and boosts the immune system.

Probiotic strains and prebiotic: Lactobacillus casei Lactobacillus acidophilus Lactobacillus rhamnosus Lactobacillus bulgaricus, Bifidobacterium longum Bifidobacterium breve, Streptococcus thermophilus (109 CFU blend) +Fructooligosaccharides (FOS)

Indications: Boosting immune system, Gastroentritis such as antibiotic associated diarrhea.

Prevention and control of nosocomial infections such as ventilator-associated pneumonia (VAP), Reducing postoperative complications such as infection and gastroparesis Prevention and reduction of diarrhea caused by chemotherapy and radiotherapy Reducing symptoms of IBS and IBD. Reducing recovery period and risk of infections recurrency. Dosage Form: 30 capsules of 500 mg GLUTEN FREE

#### Daily east®

Daily east contains Saccharomyces boulardii, beneficial probiotic yeast, which has been used as probiotic for many years worldwide and has lots of proven health benefits.

Probiotic strain: Each capsule of DailY east contains active yeast saccharomyces boulardii (equivalent to 1010 CFU) and is a rich source of group B vitamins, rare minerals such as selenium and chromium, antioxidants, nucleic acids and essential amino acids with high absorption potential.

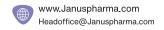
# Zist TakhmJarf Andishan-e Navid-e Salamat (JANUS) ir



# Zist TakhmJarf Andishan-e Navid-e Salamat (JANUS) ir

In 2012, a group of professors at Tehran University of Medical Sciences decided to apply the results of years of research conducted on the latest options for treatment of diseases. Therefore, a knowledge-based company was established in order to produce and present products. Several meetings were held, and the team members were selected. Eventually, in winter 2013, the establishment of the company was approved by the director of Tehran University of Medical Sciences and the knowledge-based start-up company named "Jarf Andishan-e Navid-e Salamat" (Janus) established in summer 2014. Janus attempts not only to satisfy the pharmaceutical needs of dermatologists in the treatment of patients but also to make novel pharmaceutical formulation.







No-lice solution with stainless steel head lice removal comb a topical solution of hydroalchoholic extract of eucalyptus for cleaning head lice with stainless steel head lice removal comb

No-lice solution with plastic comb a topical solution of hydroalchoholic extracts of eucalyptus for cleaning head lice with plastic head lice removal comb.

#### **JanuLET**

JanuLET is a combination of lidocaine, epinephrine and tetra Caine available as an aqueous solution. JanuLET is a topical anesthetic solution for micro pigmentation, micro needling and tattoo.

#### Janu-brime

A topical gel consists of brimonidine tartrate 0.5% for treating erythma m rosacea.

#### Januluma

Januluma is a combination of Tretinoin, fluocinolon and Hydroquinone. Januluma is a topical cream for treating melasma and hyperpigmentation.

#### Januheal

Januheal is a topical ointment consist of honey and avocado oil for first- and second-degree partial thickness bums, diabetic foot ulcers, skin inflammation after laser therapy.







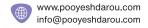
# Pooyesh Darou



# **Pooyesh Darou**

Founded in 1997, Pooyesh Darou Pharmaceuticals is today one of the most well-established biotechnology companies through the Middle East. With 6 recombinant biopharmaceutical products helping patients in the country, Pooyesh Darou Pharmaceuticals became regional leader in the effort to develop and apply the most advanced capabilities in biotechnology to address a range of unmet medical needs. Pooyesh Darou Pharmaceuticals has acquired technology exclusively from the ICGEB (United Nations' International Center for Genetic Engineering and Biotechnology, Trieste-IT ALY) to manufacture recombinant-DNA-based therapeutic proteins, the endogenous hormones and leukotriene that control essential body functions. The company is the first in Iran to use these genetically modified bacteria and cells to produce basic endogenous proteins.







#### Pegaferon® 180 mcg

Pegaferon® (Peginterferon alfa-2a) is a recombinant human protein (MW 19 kDa) conjugated to monomethoxy polyethylene glycol (PEG) for a total MW of about 60 kDa. Interferon alfa-2a is produced biosynthetically using recombinant DNA technology and is the product of a cloned human leukocyte interferon gene inserted into and expressed in E coli. Purified IFN has 165 amino acids and a molecular mass of 1923 7.

#### PDxane® 8000, 6000, 4000, 2000

PDxane® is an antithrombotic agent, heparin group. PDxane® is a low molecular weight heparin with a mean molecular weight of approximately 4,500 daltons. The drug substance is the sodium salt. Each 1 mg Enoxaparin is equivalent to 100 IU anti-Xa activity. Enoxaparin sodium is characterized by a higher ratio of antithrombotic activity to anticoagulant activity than unfractionated heparin. At recommended doses, it does not significantly influence platelet aggregation, binding of fibrinogen to platelets or global blood clotting tests such as APTT and prothrombin time.

#### PDferon®

#### PDpoetin® 10000, 4000, 2000

Erythropoietin (EPO) is a glycoprotein hormone produced primarily by the kidney in response to hypoxia and is the key regulator of red blood cell (RBC) production. PDpoetin® is a Recombinant human EPO (epoetin alfa), expressed in Chinese hamster ovary cells, and has a 165 amino acid sequence identical to that of human urinary EPO; the 2 are indistinguishable on the basis of functional assays. The apparent molecular weight of erythropoietin is 34000 Dalton.

#### PDlasta®

PDlasta® (pegfilgrastim) is a covalent conjugate of recombinant methionyl human G-CSF (Filgrastim) and monomethoxypolyethylene glycol. Filgrastim is a water-soluble 175 amino acid protein with a molecular weight of approximately 19 kilodaltons (kD). Filgrastim is obtained from the bacterial fermentation of a strain of Escherichia coli transformed with a genetically engineered plasmid containing the human G-CSF gene. To produce pegfilgrastim, a 20 kD monomethoxypolyethylene glycol molecule is covalently bound to the Nr terminal methionyl residue of Filgrastim. The average molecular weight of pegfilgrastim is approximately 39 kD.

#### PDgrastim® 300 mcg

Human G-CSF is a glycoprotein which regulates the production and release of functional neutrophils from the bone marrow. PDgrastim® containing r-metHuG-CSF (filgrastim) causes marked increases in peripheral blood neutrophil counts within wenty-four hours, with minor increases in monocytes. Use of filgrastim in patients undergoing cytotoxic chemotherapy leads to significant reductions in the incidence, severity and duration of neutropenia and febrile neutropenia. Treatment with filgrastim significantly reduces the durations of febrile neutropenia, antibiotic use and hospitalization after induction chemotherapy for acute myelogenous leukemia or myeloablative therapy followed by bone marrow transplantation.

#### PDgrowth®

Somatropin or the growth hormone (GH) is one of the most abundant hormones produced by the anterior pituitary lobe. It is synthesized and secreted by specific cells, the somatotropes. GH daily secretion varies through life. Its concentration is high in children, reaching maximum levels in adolescence, while in adulthood, the concentration decreases progressively. GH secretion occurs in pulsatile and irregular way; between pulses, the flowing GH decreases up to levels that are sometimes non-detectable through some of the current methodologies. Secretion pulse amplitude achieves maximum levels at night and the most constant GH secretion occurs little after deep sleep onset.

PDgrowth® contains somatropin, the recombinant human growth hormone, whose amino acid sequence is identical to the natural growth hormone. PDgrowth® active ingredient is made up of a unique 191 amino acid polypeptide chain. Its molecular weight is 22,124 Da. It contains two disulphide bonds and it is not glycosylated. It is produces by recombinant DNA technology.

# Nano Daru



# Nano Daru

NANO DARU started up in 2011, and we have been on a nice, warm, hard-working and creative attitude ever since. From our beginnings as a formulation development company, to launching the first nano particulate product in 2016, we have tried to stay true to our core beliefs and to deliver an exceptional experience for our community and patients.







No. 4, Northern Tak Ave, Attar St, Vanak Sq, Tehran

#### **PACLINAB**

Paclinab is a microtubule inhibitor indicated for the treatment of patients with Metastatic breast cancer, locally advanced or metastatic non-small cell lung cancer, Metastatic adenocarcinoma of pancreas. It is recommended by guidelines such as NCCN and ESMO as first line regimens in metastatic pancreatic cancer in combination with gemcitabine and in non-small cell lung cancer in combination with carboplatin. Paclinab is supplied as lyophilized powder sterile, single-use vial for suspension for infusion.

#### **PALBOCAP**

Palbociclib is the first FDA-approved medication in a class of therapy called CDK 4/6 inhibitors. Taken in combination with certain hormonal therapies, Palbocap works to put the brakes on cell growth and division in hormone receptor positive, HER2- metastatic breast cancer. Palbocap is supplied in one bottle contains 21 capsules for oral administration.

#### **PADYNEX**

Padynex is a HER2 antibody drug conjugate. The antibody portion is Trastuzumab, which is humanized anti-HER2 [gG], and produced in the mammalian Chinese Hamster Ovary cells. The drug portion is DMI, which is a maytansine derivative that inhibits microtubules. These two portions are covalently connected by 4-[N-maleimidomethyl] cyclohexane-1-carboxylate (MCC), which is a stable thioether linker. Together MCC and DMI are called Emtansine and are produced by chemical synthesis. Trastuzumab Emtansine binds to the HER2 receptor's sub-domain IV and goes into the cell by receptor-mediated endocytosis. Lysosomes degrade Trastuzumab Emtansine and release DMI. DMI binds to tubulin in microtubules and inhibits microtubule function producing cell arrest and apoptosis. As well, similar to Trastuzumab, in vitro studies have shown that both HER2 receptor signalling inhibition and antibody-dependent cytotoxicity are mediated by Trastuzumab Emtansine. Padynex is supplied as a sterile, lyophilized powder in a single-use vial for concentrate for solution for infusion.

#### **EXOPIO**

Exopio is an opioid receptor antagonist with highest affinity for the mu opioid receptor. Naltrexone has little or no opioid agonist activity. Exopio is indicated for the treatment of patients with Opioid and Alcohol Dependence. Treatment with Exopio should be part of a comprehensive management program that includes psychosocial support. When used as part of a treatment plan including counseling, Exopio could help with your recovery Journey. Exopio (Naltrexone extended-release) is supplied in two single-use vials, one as powder and another as a diluent, for suspension for intramuscular injection.



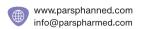
# **Pars Pharmed**



# **Pars Pharmed**

Commercial company Pars pharmed is formed to achieve new export markets for pharmaceutical and food industries of Iran. The main motivation of the company is development of pharmaceutical and medical services to the whole region, improve the quality of people's nutrition, achievement of all segments of society to high quality food, helping people to have a happier, healthier life, and improving the health of the community. Our business practices are designed to achieve quality results that exceed the expectation of patients, customers, business partners and regulators. Trying and striving company at all times to be supportive of people and patients and making the medicines and foods with the best and with Lowest cost.







#### SYNOTEK®

Generic name: Sodium Hyaluronate

Uses of: The synovial fluid in your knee lubricates and cushions the joint during movement. The major component in synovial fluid is hyaluronic acid. Hyaluronic acid and Sodium hyaluronate are a natural polymer from the glycosaminoglycan class, widely distributed in the connective tissues of animal and humans and plays a significant role in the physiological functions of that fluid. SYNOTEK® is a single use, sterile, non-pyrogenic, 1.6% solution of high molecular weight sodium hyaluronate. The sodium hyaluronate in SYNOTEK® is highly purified. Intra articular injection of SYNOTEK® improves articular function, thus relieving pain caused by osteoarthritis of the knee and painful shoulder, SYNOTEK® improves articular mobility and normalizes diseased synovial.

#### MEROVIAL@

Generic name: Meropenem

Uses of: This drug used in the cure of aerobic and anaerobic infections caused by gram positive and negative bacteria that are sensitive to it including infections of the abdomen, bones and joints, soft tissue and skin, urinary and biliary ducts, pneumonia in effect of hospitalization and septicemia in patients with immune system weakness.

#### MEROVIAL@

Generic name: Meropenem

Pharmaceutical category: MEROVIAL®injection is in a class of medications called antibiotics. It works by killing bacteria that cause infection.

Uses of: MEROVIAL® injection is used to treat skin and abdominal (stomach area) infections caused by bacteria and meningitis (infection of the membranes that surround the brain and spinal cord) in adults and children 3 months of age and older. The spectrum of action includes many Gram-positive and Gram-negative bacteria (including Pseudomonas) and anaerobic bacteria. The overall spectrum is similar to that of imipenem, although MEROVIAL® is more active against Enterobacteriaceae and less active against Grampositive bacteria. It works against extended-spectrum ~-lactamases but may be more susceptible to metallo lactamases. MEROVIAL® frequently given in the treatment of febrile neutropenia. This condition frequently occurs in patients with hematological malignancies and cancer patients receiving anticancer drugs that suppress bone marrow formation. It is approved for complicated skin and skin structure infections, complicated intra-abdominal infections and bacterial meningitis. In 2017 the FDA granted approval for the combination of Meropenem and vaborbactam to treat adults with complicated urinary tractinfections.

## **AMLOTEK®**

Generic name: Amlodipin

Pharmaceutical category: Calcium channel blockers

Uses of: AMLOTEK® is used with or without other medications to treat high blood pressure. Lowering high blood pressure helps prevent strokes, heart attacks, and kidney problems. AMLOTEK® belongs to a class of drugs known as calcium channel blockers. It works by relaxing blood vessels so blood can flow more easily. AMLOTEK® is also used to prevent certain types of chest pain (angina). It may help to increase your ability to exercise and decrease the frequency of angina attacks. It should not be used to treat attacks of chest pain when they occur. Use other medications (such as sublingual nitroglycerin) to relieve attacks of chest pain as directed by your doctor.

#### **GELOTEK®**

Generic name: Ibuprofen Pharmaceutical category:

GELOTEK® is a nonsteroidal anti-inflammatory drug (NSAID).

Uses of: GELOTEK® is used to relieve pain from various conditions such as headache, dental pain, menstrual cramps, muscle aches, or arthritis. It is also used to reduce fever and to relieve minor aches and pain due to the common cold or flu. GELOTEK® is a nonsteroidal anti-inflammatory drug (NSAID).

#### TEKATOR®

Generic name: Atorvastatin Pharmaceutical category:

TEKA TOR® is in the category of "statins".

Uses of: TEKA TOR® reduces triglycerides in the blood by lowering the levels of "bad" cholesterol (low density lipoprotein or LDL) while "good" cholesterol levels increase (High density lipoprotein or HDL). TEKATOR® is used to treat high cholesterol to reduce the risk of stroke, heart attack, or cardiac complications in people with type 2 diabetes, heart disease, or other risk factors.

#### CIPROTEKA®

Generic name: Ciprofloxacin Pharmaceutical category:

CIPROTEKA  $^{\odot}$  belongs to a class of drugs called quinolone antibiotics. It works by stopping the growth of bacteria.

This antibiotic treats only bacterial infections. It will not work for virus infections (such as common cold, flu). Unnecessary use or overuse of any antibiotic can lead to its decreased effectiveness. Uses of: This antibiotic treats only bacterial infections. It will not work for virus infections (such as common cold, flu). Unnecessary use or overuse of any antibiotic can lead to its decreased effectiveness.

### Saman Daroo



# Saman Daroo

Saman daroo 8 Pharmaceutical Company (SD8) was founded in October 2008 with an ambitious mission to care for life but had started its developmental studies a few years ago. Sd8 a biotechnology organization which operates under the holding of Samen pharmaceutical company, is the first biotechnology company in Iran and the sixth in the world that produces human recombinant factor VIII (hr FVIII). Although Saman daroo 8 was established with the aim of producing hrFVIII, but manufacturing other recombinant medicines in different therapeutically fields are in our future decision. We also have prospective plan to provide 100% of the total need of FVIII in Iran and it would be a great step for saving the economy of our country. Meanwhile, one of our main purpose is exporting Safacto (SD8, s hr FVIII) to our neighbor countries and other regions. We, at Saman daroo 8, seeking to have one of the most advanced R&D centers in the Middle East. In this center besides endeavors to develop the most efficient and long-acting FVIII, there will be attempts for improving other recombinant products and monoclonal antibodies for treating a vast spectrum of diseases such as autoimmune and neurological disorders and cancers.



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www.samandaroo.com info@samandaroo.com



Km10, Mashhad-Ghouchan Hwy, Ferdowsi Int., Khorasan Science Technology Park(KSTP)

**Products:** 

Safacto AF 500 I.U. For hemophilia patients



### Fara Darou Fanavar mehr



# Fara Darou Fanavar mehr

Fara Daru located at the Tehran University of Medical Sciences pharmaceutical incubator is a pharmaceutical company working specifically on high-tech production of probiotics. The technology and know-how of probiotic production was acquired based on several years of our group's research experience in the biopharmaceutical industry. Our microbiologists and pharmaceutical experts have years of experience in probiotic production used in food and pharmaceutical industry and starter cultures for dairy products. We specialize in isolation of novel probiotic strains from various natural sources, identification and adaptation, fermentation process and downstream processes such as freeze-drying and micro-encapsulation of probiotic strains. The importance of probiotics in promoting health and evidence-based treatments has led to a continuous increase in consumption in food, drug and dietary supplement market. Several scientific researchers have demonstrated that probiotics are more beneficial than any other known dietary supplement. Probiotics are live microorganisms that promote health by inhibiting growth of pathogenic bacteria in the intestine. Moreover, by synthesizing vital vitamins, amino acids, digesting lactose and decreasing lactose intolerance, assisting the decrease of blood cholesterol and regulating the immune system play a major role in the health of the human intestine.



Tel:+98 21 88 35 26 38

Fax:+98 21 88 35 98 80





No. 1462, North Kargar St., Pharmaceutical Incubators Center, Tehran, Iran

Reuteflor® actobacillus reuteri drops

Used for: Infantile colic

Dosage: 8×108 CFU lyophilized live friendly bacteria

A variety of causes for infant colic have been suggested, including abnormal gastrointestinal function, immaturity of the gut, spastic colon, accumulation of gas, allergic problems and lack of sufficient parent-to-child interaction. Despite this unclear and possibly multifactorial etiology, studies by independent research groups have correlated alterations in gut microflora with infant colic. This consideration has been growing in importance since the early observations of lower counts of intestinal lactobacilli and bifidobacteria in colicky infants compared to healthy ones. In contrast, evidence suggests that a high proportion of Bifidobacterium and Lactobacillus in the infant's microbiota is protective against colicky crying and fussing. This protective effect might be related with the fact that mucosal Lactobacillus are able to induce the expression of antiinflammatory genes, improving gut function and motility and exerting a reduction of visceral pain. In addition, lactobacilli and bifidobacteria may protect against colic by modulating immune response.

## Ramnoflor® Lactobacillus rhamnosus drops

Used for: Acute infectious diarrhea

Age for usage: From birth age up to 2 years old

Dosage: 5×1010 CFU lyophilized live friendly bacteria

Children in developing countries are continually exposed to enteric pathogens. This results in high rates of morbidity and mortality, especially in infants. Every day, over a thousand children die from diarrheal disease. With an estimated one billion cases affecting young children each year, diarrhea remains the second leading cause of death in children under the age of five after the neonatal period. Several factors such as antibiotic use, acute infection, and poor diet at an early age can greatly shift one's bacterial composition, impacting development and correlating with an increased risk of developing a number of lifelong chronic diseases. The use of biotherapeutic agents or probiotics to treat a variety of infectious, most notably infections of mucosal surfaces are traditionally well known. With the encouraging results of feeding yogurt in lactose intolerant diarrheas, it was believed that probiotics may enhance lactose digestion and may produce antidiarrheal effect in different types of diarrhea.

#### Reuteflor® Lactobacillus reuteri sachet

Used for: Irritable Bowel Syndrome (IBS), Abdominal Pain (FAP) in children Dosage: 8×108 CFU lyophilized live friendly bacteria.

Abdominal pain related functional gastrointestinal disorders (FGIDs) are a frequent problem in a pediatric age group. Reported prevalence of chronic abdominal pain in children is 0.3% to 19%. In a great majority of children (>90%) pain has no identifiable organic cause and is considered to be of functional origin. FGIDs are defined by chronic or recurrent symptoms in the absence of structural or biochemical abnormalities. Two frequent categories of abdominal pain related FGIDs in children are functional abdominal pain (FAP) and irritable bowel syndrome (IBS).

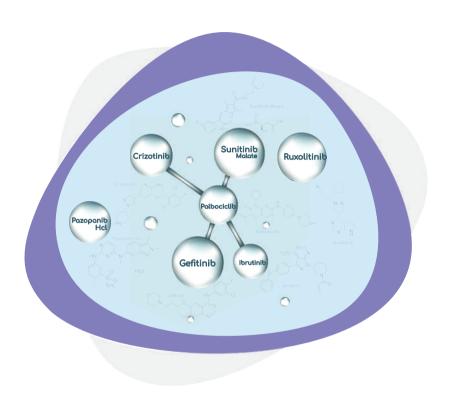
# Sabular® Saccharomyces boulardii sachet

Used for: Acute infectious diarrhea, Antibiotic associated diarrhea (AAD), Traveler's diarrhea (TD)

The use of antibiotic in early life has profound effects on the development of the gut microbiota. The use of antibiotics in infants shifts the composition of the gut microbiota toward a high abundance of bad bacteria and low abundance of good bacteria populations, decreases the overall diversity of the infant's microbiota, and selects for drug-resistant bacteria. According to some epidemiological surveys, the use of antibiotics in early life increases the risk of developing allergic diseases such as asthma, atopic disease, eczema, and type 1 diabetes. Alterations in the diversity of the gut microbiota are believed to underlie the development of antibiotic-associated diarrhea (AAD). Following the discontinuation of the antibiotic, resolution of diarrhea was accompanied by a reversal of these changes, providing the first direct evidence linking changes in the community structure of the gastrointestinal bacteria with the development of AAD. The frequency of AAD varies among different antibiotics, but AAD can affect up to 25% of the patients receiving a particular antibiotic.



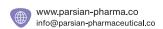
## Fanavaran Darouie Parsian



# **Fanavaran Darouie Parsian**

Parsian Pharmaceutical Company was established in 2008. It is engaged in manufacturing Active Pharmaceutical Ingredients (API). Parsian Pharmaceutical Company strives to provide high-tech APIs that improve the knowledge of drug development and transfer them to the local market and also to the global market. A team of personnel of various disciplines and pharmacists are working towards to meet the customers' requirements and the objective of continuous improvement in quality. Production unit of Active Pharmaceutical Ingredient (API) is built and equipped according to GMP principles. In this regard international guidelines such as ICH (Q7) and PIC/S-GMP, were considered as main references. According to this object, Parsian Pharmaceutical Company were developed and equipped by complimentary production facilities like, containment granulation line. It should be noted that the production license for these manufactured products has been obtained from the Food and Drug Administration.







## **Imatinib Mesylate**

Imatinib is a tyrosine-kinase inhibitor used in the treatment of multiple cancers, most notably Philadelphia chromosome-positive (Ph+) chronic myelogenous leukemia (CML).

## Nilotinib HCI Monohydrate

Nilotinib is an orally bioavailable aminopyrimidine-derivative Bcr-Abl tyrosine kinase inhibitor with antineoplastic activity. Designed to overcome imatinib resistance, nilotinib binds to and stabilizes the inactive conformation of the kinase domain of the Abl protein of the Bcr-Abl fusion protein, resulting in the inhibition of the Bcr-Abl-mediated proliferation of Philadelphia chromosome-positive (Ph+) chronic myeloid leukemia (CML) cells. This agent also inhibits the receptor tyrosine kinases platelet-derived growth factor receptor (PDGF-R) and c-kit, a receptor tyrosine kinase mutated and constitutively activated in most gastrointestinal stromal tumors (GISTs). With a binding mode that is energetically more favorable than that of imatinib, nilotinib has been shown to have an approximately 20-fold increased potency in kinase and proliferation assays compared to imatinib.

#### Letrozole

This medication is used to treat certain types of breast cancer (such as hormone-receptorpositive breast cancer) in women after menopause. Letrozole is also used to help prevent the cancer from returning. Some breast cancers are made to grow faster by a natural hormone called estrogen. Letrozole decreases the amount of estrogen the body makes and helps to slow or reverse the growth of these breast cancers.

#### Riluzole

Riluzole is a drug used to treat amyotrophic lateral sclerosis. Riluzole blocks TTX-sensitive sodium channels, which are associated with damaged neurons. Riluzole has also been reported to directly inhibit the kainate and NMDA receptors. Rather, its ability to stimulate glutamate uptake seems to mediate many of its effects In addition to its role in accelerating glutamate clearance from the synapse, Riluzole may also prevent glutamate release from presynaptic terminals. These effects combined could significantly reduce glutamate signaling and cause indirect antagonism without acting at glutamate receptors themselves.

# Dimethyl fumarate

Dimethyl fumarate is a lipophilic, highly mobile molecule in human tissue. As a  $\alpha,\beta$ -unsaturated electrophilic compound, dimethyl fumarate is rapidly attacked by the detoxifying agent glutathione (GSH) in a Michael addition reaction. Dimethyl fumarate is highly reactive: when administered orally, it does not survive long enough to be absorbed into blood without being attacked by GSH. However, part of it is hydrolyzed by esterases to produce monomethylfumarate, which is more resistant.

#### **Teriflunomide**

Teriflunomide is an immunomodulatory drug inhibiting pyrimidine de novo synthesis by blocking the enzyme dihydroorotate dehydrogenase. Teriflunomide inhibits rapidly dividing cells, including activated T cells, which are thought to drive the disease process in MS. Teriflunomide may decrease the risk of infections compared to chemotherapy-like drugs because of its more-limited effects on the immune system. It has been found that teriflunomide blocks the transcription factor NF-kB. It also inhibits tyrosine kinase enzymes, but only in high doses not clinically used.

#### Sorafenib Tosylate

Sorafenib is indicated as a treatment for advanced renal cell carcinoma (RCC), unresectable hepatocellular carcinomas (HCC) and thyroid cancer and is a small inhibitor of several tyrosine protein kinases, such as VEGFR, PDGFR and Raf family kinases (more avidly C-Raf than B-Raf).

#### Erlotinib HCI

Erlotinib belongs to a group of medicines called epidermal growth factor receptor tyrosine kinase inhibitors which are used to treat cancer. Also prevents the activity of a protein called epidermal growth factor receptor. This protein is known to be involved in the growth and spread of cancer cells.

#### Sunitinib Malate

sunitinib malate an oral multi-kinase inhibitor and works by blocking multiple molecular targets implicated in the growth, proliferation and spread of cancer. Sunitinib belongs to the group of medicines known as antineoplastics. It is used to treat a gastrointestinal stromal tumor (GIST) after a medicine called imatinib did not work very well. It may also be used when patients are not able to take imatinib. GIST is a group of cancer cells that start growing in the wall of the stomach, intestines, or rectum. Sunitinib is also used to treat advanced (late-stage) kidney cancer. Sunitinib is also used to treat a type of pancreatic cancer called pancreatic neuroendocrine tumor (pNET), that cannot be surgically removed and is locally advanced or metastatic (cancer that has spread).

# **Empagliflozine**

Empagliflozin is indicated for use as an adjunct to diet and exercise to improve glycemic control in adult patients with type 2 diabetes mellitus for whom metformin is inappropriate due to contraindications or intolerance. Empagliflozin is a sodium-glucose co-transporter 2 (SGLT2) inhibitor. By inhibiting SGLT2, reduces renal reabsorption of filtered glucose and lowers the renal threshold for glucose, and thereby increases urinary glucose excretion.

# NanoAlvand

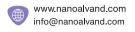




# **NanoAlvand**

NanoAlvand is a knowledge-based Company established in 2011, focusing on hazardous, anticancer products. NanoAlvand manufactures the latest highly potent pharmaceutical products in local and international markets. Quality is the corner stone of NanoAlvand. Each member is responsible and accountable for providing the highest quality. NanoAlvand has exploited updated knowledge and technology to provide the best quality with the most precise scientific methods. Ethics is the main concept in the interactions of NanoAlvand components both in personal and work-related interactions. Every relationship is based on mutual respect and ethics. This mutual respect is not only the keychain in NanoAlvand internal interactions but also is the main determinant in patients and consumer's relation with NanoAlvand. NanoAlvand is devoted to put the latest knowledge of pharmaceutics and the novel technologies together to manufacture high quality products.







#### Alvoxal®

Generic Name: Oxaliplatin

Dosage Forms & Strengths: 50mg/10mL, 100mg/20mL concentrate for solution for

infusion

Indication: Colorectal Cancer

#### Alvotere®

Generic Name: Docetaxel

Dosage Forms & Strengths: 20mg/1mL, 80mg/4mL, 160mg/8mL concentrate for solution

forinfusion

Indication: Breast, Prostate, Head & Neck, Non-Small Cell Lung Cancer, Gastric

Adenocarcinoma

#### Alvopax®

Generic Name: Paclitaxel

Dosage Forms & Strengths: 30mg/5mL, 100mg/16.7mL, 150mg/25mL, 300mg/50mL

concentrate for solution for infusion

Indication: Breast, Ovarian, Non-Small Cell Lung Cancer, AIDS-related Kaposi's Sarcoma

#### Alvinotec®

Generic Name: Irinotecan

Dosage Form & Strength: 40mg/2mL concentrate for solution for infusion

Indication: Colorectal cancer

#### Alvocade®

Generic Name: Bortezomib

Dosage Forms & Strengths: 3.5 mg powder for solution for injection

Indication: Multiple Myeloma, Mantle Cell Lymphoma

#### Alvopem®

Generic Name: Pemetrexed

Dosage Forms & Strengths: 100, 500 mg powder for concentrate for solution for infusion Indication: Non-Squamous Non-Small Cell Lung Cancer, Malignant Pleural Mesothelioma

## Leudribine®

Generic Name: Cladribine

Dosage Forms & Strengths: 10mg/10mL, 10mg/5mL concentrate for solution for infusion

Indication: Hairy Cell Leukemia

#### Cabotax®

Generic Name: Cabazitaxel

Dosage Form & Strength: 60mg/1.5mL concentrate and solvent for solution for infusion

Indication: Prostate Cancer

# Neofor®

Generic Name: Plerixafor

Dosage Form & Strength: 24mg/1.2mL solution for injection

Indication: Stem Cell Transplantation

## Idanthra®

Generic Name: Idarubicin HCI

Dosage Forms & Strengths: 5mg/5ml, 10mg/10 ml solution for injection Indication: Acute

Myeloid Leukemia

# Noavaran Daroui Kimia





# Noavaran Daroui Kimia

Noavaran Daroui Kimia Company established in 2010 for developing high tech pharmaceutical product. A team of personnel of various disciplines and pharmacist are working towards to meet the GMP and Customers requirements and the objectives of continuous improvement in quality.

The products of the Kimia co. are solid dosage form, and most of the products of company are classified as tyrosine kinase inhibitor, and used for cancer treatment.







No. 1462, North Kargar St, Shaid Gomnam Highway, Tehran, Iran

Postal Code: 1439955991

#### Kimonil

Generic Name: Nilotinib

Dosage Forms & Strengths: 200 mg, 150 mg Capsule

Kimonil is used to treat a certain type of blood cancer (chronic myelogenous leukemia-

CML)

#### Kitent

Generic Name: Sunitinib

Dosage Forms & Strengths: 50, 25, 12.5 mg Capsule

Exhibits antitumor and antiangiogenic properties by inhibiting multiple receptor tyrosine kinases, including platelet-derived growth factors (PDGFR-alpha and PDGFR-beta), vascular endothelial growth factors (VEGFR1, VEGFR2, and VEGFR3), FMS-like tyrosine kinase-3 (FLT3), Colony-stimulating factor type 1 receptor (CSF-1R), and glial cell-line derived neurotropic factor Receptor (RET).

#### **Imatinib**

Generic Name: Imatinib

Dosage Forms & Strengths: 400 mg Tablet, 100 mg Capsule

Imatinib, a specific inhibitor of Bcr-Abl tyrosine kinase, is an antineoplastic agent that is structurally and pharmacologically distinct from other currently available antineoplastic agents.

The Philadelphia chromosome, characteristic of chronic myelogenous leukemia (CML), is created by a reciprocal translocation. Translocation between chromosomes results in production of an abnormal protein (Bcr-Abl tyrosine kinase) that exhibits enhanced tyrosine kinase activity.

Imatinib competitively inhibits Bcr-Abl tyrosine kinase, The drug has been shown to inhibit

proliferation and induce apoptosis of Bcr-Abl positive cells as well as fresh leukemic cells from Philadelphia chromosome positive CML. Imatinib also appears to inhibit receptor tyrosine kinases for platelet-derived growth factor (PDGF) and stem cell factor (SCF), c-Kit, and PDGF mediated and SCF-media cellular events. Data from in vitro studies shows that Imatinib inhibits proliferation and induces apoptosis in gastrointestinal stromal tumor (GIST) cells.

#### Soranex

Generic Name: Sorafenib

Dosage Forms & Strengths: 200 mg Tablet

Sorafenib is a kinase inhibitor that decreases tumor cell proliferation. Sorafenib inhibited tumor growth and angiogenesis of human hepatocellular carcinoma and renal cell carcinoma, and differentiated thyroid carcinoma.

## Kimotar

Generic Name: Erlotinib

Dosage Forms & Strengths: 150 mg Tablet

Kimotar® inhibits the intracellular phosphorylation of tyrosine kinase associated with the epidermal growth factor receptor. Kimotar® expressed on the cell surface of healthy cells and cancer cells, and prevents auto phosphorylation of tyrosine residues associated with the receptor, thereby inhibiting further downstream signaling. It is used for the management of locally advanced or metastatic non-small cell lung cancer either in disease that is unresponsive to other therapy, or as maintenance monotherapy in those with stable disease after platinum-based first-line treatment of patients with locally advanced, unrespectable or metastatic pancreatic cancer.

# Gefitinib

Generic Name: Gefitinib

Dosage Forms & Strengths: 250 mg Tablet

Gefitinib is a tyrosine kinase inhibitor indicated for the first-line treatment of patients with metastatic non-small cell lung cancer (NSCLC) whose tumors have epidermal growth factor receptor (EGFR) exon 19 deletions or exon 21 (L858R) substitution mutations as detected by an FDA-approved test.

#### Dasatinib

Generic Name: Dasatinib

Dosage Forms & Strengths: 50 mg Tablet, 100 mg Tablet

Dasatinib, at nanomolar concentrations, inhibits the following kinases: BCR-ABL, SRC family (SRC, LCK, YES, FYN), c-KIT, EPHA2, and PDGFRβ. Based on modeling studies, Dasatinib is predicted to bind to multiple conformations of the ABL kinase.





# **Huber Darou Gostar**



# **Huber Darou Gostar**

We aim to be amongst global leaders in peptide manufactures Huber pharma's facilities have received local regulatory approvals for its facilities as well as for the product from food and drug organization and regarding Huber pharmaceutical started its operation as peptide manufacture way back in 2014 at Avicenna National Biotechnological Park in Tehran-Iran. The commercial production of its first product was started in October 2016. In 2017, the company had further enhanced its operations by inducing new production facilitation for solid phase manufacture of peptides. Today we have carved a niche for ourselves in the exceedingly competitive and quality conscious field and peptide manufacturing good conditions of its facilities it will receive international regulatory approvals without major problems.



Tel: +98 21 88 01 29 46 Fax:+98 21 88 01 29 46



www.huberpharma.co info@huberpharma.co



Avecinna National Biotechnological Park, No. 1462, North Karegarst, Tehran, Iran

Huber Darou Gostai

# **Products:**

# Glatiramer acetate (lyophilized powder) API

Indication: Glatiramer acetate use for reduction of the frequency of relapses in patients with Relapsing-Remitting Multiple Sclerosis.

Mechanism of Action: Glatiramer is antigenically similar to myelin basic protein, which is an important component of the myelin sheath of nerves; Glatiramer is thought to induce and activate T-lymphocyte suppressor cells specific for a myelin antigen, it is also proposed that Glatiramer interferes with the antigen-presenting function of certain immune cells opposing pathogenic T-cell function.



# Also in this category, companies that will be presented in the future version of this catalog are:

- 1 Elshen Darou
- 2 Pars Zist Exir
- 3 Zist Fanavari Tat Pars Jen
- 4 Fanavaran Rojan Mohaghegh Darou
- 5 Pishgaman Fanavari Daroue Apadana
- 6 Hoom zist
- 7 Hamer Novin Darou Tolid

# **Health Information Technologies**

TRITA Intelligent Innovations (TritApp)
Mehr Andish Rayane Pars ( Mearsys)
Padidar company



# TRITA Intelligent Innovations (TritApp)



# TRITA Intelligent Innovations (TritApp)

TritApp is a social network for Healthcare Professionals that allows its members to interact directly with other professionals to gain access to advanced, up-to-date, accurate, and interdisciplinary knowledge. TritApp provides a strong context of learning and knowledge sharing for healthcare professionals (Professors, Students, Experts, and Researchers etc.) and institutions (Universities, Research Centers, Hospitals, Scientific Communities, Congresses, Businesses, etc.). TritApp would become the first choice of healthcare professional around the world (Focused on MENA regions and Islamic Countries) as a platform of interaction with other professional and institutions that providing their products and services. TritApp members can learn and share their knowledge regardless of the geographical, language and nationality constraints with the worldwide services.



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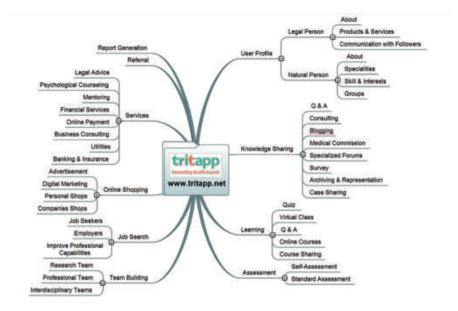
Fax:+98 21 88395367





Unit 30, No. 1547, North Kargar St, Tehran, Iran

# TritApp deliver a vast range of services to its member as below:



# TritApp Features:

Member's profiles (Legal & Natural Persons)
Knowledge Sharing
Question & Answer
Group Discussions
Virtual Commission
Online Forum & Blogging
Team Building
Community of Practice (CoP)
Multi-Media Learning Episode
Online Quiz
Online Survey





# Mehr Andish Rayane Pars (Mearsys)

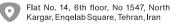


# Mehr Andish Rayane Pars (Mearsys)

Mearsys is one of the medical informatics-based companies registered and incorporated since 2017 and located in Health information technology Roshd Center of Tehran university of Medical Sciences. We give consultant, designing and implementing the medical informatics software in medical data management, e-health and IOT fields. Mearsys became Knowledge enterprise since 2019 and our products are using in hospitals and research centers in Iran.







## Regitory

Regitory is a web-based software developed by Mearsys Team. Regitory provided you all the modules and facilities to design a registry form, entering registry data and analyze and mine data with data-mining methods.

# Regitory Services:

- In each registry you can design your form by defining data tree model.
- By defining relations between parameters you can design cardinality and multiplicity in your form
- · Regitory gives you the chance to run multi-central registries by defining centers.
- Regitory can validate the data, by defining limitation for acceptable data, Regitory prevents mistakes.
- Regitory provides a set of managing and analytical dashboards, which you can add your favorite and needed statistical tests and review them. You can design your analytics once and Regitory updates results with new case records.
- Regitory support features for exporting data model and case records data in xml format.
- Regitory also facilities extracting data in table format and exporting in PDF, MS Excel, CSV and etc. by providing datasheet features which done by defining columns and applying filters.

## Meditory

 $\label{lem:median} \mbox{Meditory is a specialized software to Referral Management and Provide e-health services.} \\ \mbox{This product is under development.}$ 

## **Padidar**



# **Padidar**

We use VR technology with reference based scenarios approved by group of clinicians and medical education consultants together, trying to teach them different procedures step by step. In this way students can do any procedure without any limitation, in any situation, repeat it forever, have live feedback for their mistakes, record their activities and review them and more importantly do it without any stress.

Recently, we have entered rehabilitation field hoping to treat patients with cognitive disorders whether they are congenital disordered or they have cognitive impairments caused by diseases like Alzheimer, Parkinson, brain stroke etc.

After all we use Augmented Reality technology to build an application which gives different information about a medicine provided by it's producer; such as side effects, doses adjustment in different diseases and for different ages, contraindications, price and the instruction of how to use for some of them like Insulin pens etc so easily by just scanning it's package.





Lumbar Puncture Virtual Reality software
Abdominocentesis Virtual Reality software
Botox Injections Virtual Reality software
Augmented Reality application for giving drug instructions

# Also in this category, companies that will be presented in the future version of this catalog are:

- 1 Zist Dadeh Pardaz Aka
- 2 Modiran Salamat Parsi teraje
- 3 Mehr Andish Rayaneh pars
- 4 Haste Fanavar Feyz

# **Medical Equipment and Devices**

**Ultrasonic Technology Development Lotus Intelligent Micro/Nano sensors PARSISS Integrated Company** Parto Negar Persia Co. **Ultra-Array Processing SINA Iranian Tissue Product Co Fanavaran Jarahyar Sharif** Behin Negareh Co. **Omid Institute for Advanced Biomodels** Nano Hesgarsazan Salamat Arya **Nano System Pars Sina Robotics and Medical Innovators** Zist Abzar Pajoohan **SABZ Biomedicals SinaCell Tanin Pardaz Pasargad Fanavaran Nano Meghyas** 

Dorsa Behsaz (DorsaTech)



# **Ultrasonic Technology Development**

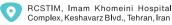


# **Ultrasonic Technology Development**

The scientific background of TOPSONICS dates back to 2003 with the design and manufacturing of ultrasonic surgical knife. Today, this company is one of the leading and fast growing in the field of power ultrasonic technology. Ultrasonic waves are mechanical waves whose frequency exceeds human hearing range (20 Hz- 20 kHz.). Due to their property, these waves have different and somewhat interesting applications. Using a simple calculation, if a point with a frequency of 25 KHz. and a domain of 10 micrometer oscillates, its acceleration reaches a magnitude which is 25000 times greater than that of earth gravity (g=9.8 m/s^2). Due to this acceleration and high speed, cavitation in liquids occur and during the phenomena of explosion of bubbles, an approximate pressure of 200 psi along with a temperature of 5000\mathbb{R} are observed. On the other hand, if a relative movement with the abovementioned condition is occurred between two layers of thermoplastic, the high temperature leads to bonding of the two layers which is called ultrasonic welding one of the industrial applications of ultrasonic technology.







# Ultrasonic homogenizers

Ultrasonic homogenizers are widely used in Nanotechnology to disperse nano material in to the oil and water. Besides that, phytochemistry, medicine, oil and gas are some other filed which ultrasonic homogenizer are useful.

Property	UP400
Input Voltage (V)	220
Input Current (A)	2
Input Frequency (Hz)	50-60
Output power (W)	0-400
Output Frequency (KHz)	20±1
Interface	TFT LCD (touch)
Working Mode	Pulse
Total duration for a cycle (min)	30
Thermometer	Yes (PT-100)
Temperature range (C°)	0-100





# Lotus Intelligent Micro/Nano sensors



# **Lotus Intelligent Micro/Nano sensors**

Lotus Intelligent Micro/Nano Sensors (IMNS) is a knowledge-based company in the field of technology development and manufacture of advanced electronic sensors, relying on MicroNano fabrication technology. IMNS is capable of providing advanced technical and engineering services with the leading infrastructure and advanced equipment. Having Class 1 and 2 clean rooms, advanced lithography equipment, deposition, and wet and dry etching, as well as specialists in the field of electronics, semiconductors and biology made the company to compete with the world-class advantage.







1st Floor, Kabouli Building, Institute Center for Medical Equipment and Devices, Imam Khomeini Hospital, Gharib St, Keshavarz Blyd, Tehran-Iran

## **AFM TIP**

Atomic force microscopy (AFM) or scanning force microscopy (SFM) is a very-high-resolution type of scanning probe microscopy (SPM), with demonstrated resolution on the order of fractions of a nanometer, more than 1000 times better than the optical diffraction limit. AFM was developed to overcome a basic drawback with STM – it can only image conducting or semiconducting surfaces. The AFM has the advantage of imaging almost any type of surface, including polymers, ceramics, composites, glass, and biological samples.

#### General info:

Probes consist of three main parts: substrate, cantilever, and tip

#### Substrate

Material: single, crystal silicon Chip size: 1.6 x 3.4 x 0.3 mm

Cantilever: Available for contact, semi-contact and non-contact modes.

Shape: Rectangular with trapezium-shape cross section

Tip

Shape: tetrahedral

Height: 10 to 20 micrometer

## Properties:

Compatible with the most of commercial AFM devices High reflective chemically stable Au backside coating

The base silicon is highly doped to avoid electrostatic charges

High aspect ratio tips

Probes are available with no coating

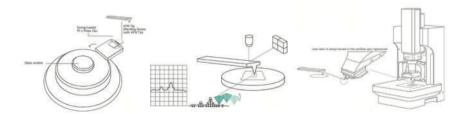
Probes are available tipless

Probes packaged in boxes with 15,50,400 chips and one 4inch wafer  $\,$ 

Probes with conductive and magnetic coatings are available

Thick cantilevers possible

Monolithic design





# **Parsiss Integrated Company**



# **Parsiss Integrated Company**

The application of new technologies in medical science has been formed in PARSISS Integrated Company in the Incubation Center of Medical Equipments and Devices since 2006. The preliminary studies of designing and manufacturing the navigation system, initiated with the presence of dominant professors from authentic universities of Iran along with the cooperation of many experts in the fields of Medical Engineering, Biomechanics, software and hardware engineering, Image Processing and other related fields. Finally, in 2011 after 5 years continuous effort, various executing steps including design, implementation and Integration modules, advanced troubleshooting and optimization was completed and Parseh surgical navigation system with some better features than the similar foreign products, was presented successfully as a complete and integrated model of a navigation system in the surgery room.







#### OV4

OV4 is a comprehensive and high-performance surgical navigation system for Neurosurgery and ENT, Spine and Maxillofacial surgeries. Using advanced technology and high precision IR camera it offers surgeons more accurate and reliable navigation during surgery.

OV4 has fast, user friendly and robust software which provides simple and minimal hand interaction by more automatic visualization procedures. This comprehensive software offers advanced facilities from pre-operative planning to post-operative documentation.

System supports wide range of data inputs such as CT scan, MRI and fMRI images and fuses them precisely. It has full integration with operation room devices such as endoscope, microscope and different imaging devices.

#### **General Features**

Perfect design with small footprint and high maneuverability
Easy positioning of the large display dedicated to surgeon
Virtual key and foot switch to activate predefined system tasks
UPS support to continue working in the case of power failure

### Compo

CompoTM is a comprehensive surgical navigation system for Neurosurgeries, ENT, and Spine and Maxillofacial surgeries. This streamlined and easy to use system due to small footprint and its electrical adjustable height feature have greatly enabled surgeons to confidently perform complicated surgical operations and experience surgical navigation systems in its most simplistic form.

Compo has a widespread medical application that has covered different kind of surgeries from a simple biopsy to complicated surgery. Surgical navigation system improves the quality and accuracy of the operations and makes it possible to reach success in complicated and dangerous surgeries, which have had a lot of mortality before. In the field of neurosurgery surgical navigation system has different applications such as deep brain stimulations (DBS) or tumor dissections. The usage of this technology makes it possible for the surgeon to make sure that the tumor dissected completely without damaging the other healthy tissues.

#### IV2

IV2 is a high-performance surgical navigation system for ENT surgeries. Using advanced technology and high precision optical camera it offers surgeons more accurate and reliable navigation during surgery.

IV2 has fast, user friendly and robust software which provides simple and minimal hand interaction by more visualized and automatic procedures. This comprehensive software offers advanced facilities from pre-operative planning to post-operative documentation.

System supports wide range of data inputs such as CT scan, MRI and fMRI images and fuses them precisely. It has full integration with operation room devices such as microscope, endoscope and different imaging devices.

## DentoGuide

DentoGuide™ is a computerized navigation system designed to guide the placement of dental implants in real time. In contrast to the bulky plastic drilling guides, DentoGuide™ offers freehand implant navigation empowered by highly accurate motion tracking technology that tracks the positions of the dental drill and patient throughout the surgery. This equips implant surgeons with valuable and detailed information of the drilling path while keeping their full control over the implant drilling beside the direct view of the implant site.

#### Features:

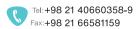
- · High precise and reliable navigation system
- · Advanced, user friendly and robust software
- · High maneuverability Flexible arms
- Large monitor
- · Supporting Wide range of image types





# Parto Negar Persia

Parto Negar Persia (PNP) company with limited responsibility was established and registered on 08.06.2010 with registration number 377090. The company was qualified to register as knowledge-based company by the vice-presidency for science and technology in 2012 because of producing several knowledge-based products. The PNP specializes in design, produce, installation and maintenance of medical imaging equipment especially in the field of nuclear medicine (NM). The company also presents the professional and technical consultations to the imaging and therapy centers concerning to the activity field of the company. The great achievements and reputation of the company are mainly due to enjoying good management, capable staff, latest technology and maximum use of the great potentials existing in our country. In spite of the nuclear sanctions, the PNP was achieved the high technology of nuclear medicine relaying on the young and expert peoples. The company also has been certified to ISO9001 and ISO13485.







#### **Xtrim PET**

The application of small animal models for studying human disease has under gone a rapid advancement in biomedical research in the recent two decades. In this trend, preclinical PET systems are very popular playing an important role in many applications needing the use of molecular imaging techniques to investigate cellular and molecular imaging techniques to investigate cellular and molecular processes associated with disease in live animal. Xtrim PET is a preclinical PET imaging system with a good resolution/sensitivity compromise providing rodent images of high quality with user friendly handling and software.

#### **HiReSPECT**

Small animal imaging is an emerging field which has an impact on various biomedical research areas such as neurology, oncology, cardiology, immunology and infection biology. The Pharmaceutical industries and research centers will profit from SPECT system as they accelerate drug and biomarker development by yielding more reliable in vivo results and cost effective study design. HiReSPECT provides the highest performance and versatility available to address your preclinical imaging research needs from academic and translational research to drug discovery and development. The HiReSPECT is a dual head small animal SPECT imaging system that provides in vivo high resolution three-dimensional (3D) images of physiological functions in small laboratory animals.

#### SURGEOSIGHT

Conventional gamma cameras are widely used to perform lymphoscintigraphy for sentinel lymph nodes (SLN). However, they are not dedicated for such an application e.g. their large size prevents them to be used in the operative room to image the SLN s. This platform that can intraoperatively provide high resolution and sensitivity images of the surveyed areas. Dedicated electronics were designed and developed for data acquisition and processing of data and were placed inside the system's head and trolley. The trolley is equipped with an adjustable arm (4 degrees of freedom) to perform required motions around patient and can be easily placed around the patient body. SURGEOSIGHT is a portable mini gamma camera developed for pre-surgical lymphoscintigraphy, thyroid scan and intra operative localizing sentinel lymph nodes.

#### HeliGuide

UBT is recommended by European Helicobacter pylori experts as the first choice and the most reliable non-invasive test for diagnosing an active infection as well as for follow-up of eradication of infection. When performing the UBT, the patient is given an oral dose of 14C labeled urea. If Helicobacter pylori are present in the stomach, labeled CO2 is present in exhaled air shortly after intake of labeled urea. 10 minutes after the patient has swallowed 14C labeled urea, the patient exhales into Breath Card. 14C is a beta emitter, so Breath Card is inserted into the system for counting beta activity of Breath Card. The result is presented 250 seconds later as "infected" or "not infected".

#### **SURGEOGUIDEII**

A gamma probe is a handheld device used for intraoperative use following interstitial injection of a radionuclide, to locate regional lymph nodes by their radioactivity. It is used primarily for sentinel lymph node mapping and parathyroid surgery. Radionuclides which uses usually are Tc-99m, I-131 & F-18. Gamma probes can also be used in open surgery, laparoscopy and theroscopy (inside the body), and can be used externally (outside the body). Most use of gamma probes is in Sentinel Lymph Node Biopsy (SLNB) and Radio-Guided Occult Lesion Localization (ROLL). But these systems can be used in all cases where the detection of small points with high activity distribution, high sensitivity and resolution is desired.

### **ProSPECT**

Cardiac imaging has become an integrated part in the diagnostic and prognostic work-up of patients with cardiovasular disease. We designed and developed a dedicated cardiac SPECT system for cardiac imaging called ProSPECT. The ProSPECT scanner designed with comfort patients in mind. The scanner provides both supine and prone imaging with small footprint. The system increases comfort patients specially patients with claustrophobia disorder because the head of patients comes out of the bore of gantry during scanning process. This dedicated cardiac imaging system introduces an optimized FOV to minimize inappropriate activity uptake of other organs. The system is included detectors, gantry, bed, trolley and analysis work station. It should be noted two perpendicular detector heads designed and optimized for cardiac imaging. The detectors of the scanner are based on Nal (TI) crystal and 24 rectangular PMTs (76x76 mm) in 4x6 form cover the detection area.



## **Ultra Array Processing SINA**



# **Ultra Array Processing SINA**

The research activity of this company has been started from year 2014 (from the time of initiating the technologic core of the company) with focus on biomedical array signal processing and recording (EEG), ultrasound array signal processing and image reconstruction (Micro-ultrasound), trans cranial focused ultrasound brain stimulation (tFUS), and multimedia array signal recording and broadcasting fields. Up to now, this company, has been successful on developing of experimental prototypes, semiindustrial and industrial versions of above-mentioned systems to be employed at research laboratories and the R&D department of the company is continuously working on promoting the developed products to be presented soon.







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#### **tDCS**

Transcranial direct current stimulation (tDCS) is a form of neuro modulation that uses constant, low direct current delivered via electrodes on the head. It can be contrasted with cranial electrotherapy stimulation, which generally uses alternating current the same way. It was originally developed to help patients with brain injuries or psychiatric conditions like major depressive disorder. There is increasing evidence for tDCS as a treatment for depression. However, there is mixed evidence about whether tDCS is useful for cognitive enhancement in healthy people. Several reviews have found evidence of small yet significant cognitive improvements. Other reviews found no evidence at all, although one of them has been criticized for overlooking within-subject effects and evidence from multiplesession tDCS trials. There is no good evidence that tDCS is useful for memory deficits in Parkinson's disease and Alzheimer's disease, schizophrenia, non-neuropathic pain, or improving upper limb function after stroke. One of the aspects of tDCS is its ability to achieve cortical changes even after the stimulation is ended. The duration of this change depends on the length of stimulation as well as the intensity of stimulation. The effects of stimulation increase as the duration of stimulation increases or the strength of the current increases. The way that the stimulation changes brain function is either by causing the neuron's resting membrane potential to depolarize or hyperpolarize, tDCS has been proposed to promote both long term potentiation and long term depression.

The devices manufactured in this company are:

- · Fornix: 1 channel Analog Brain Electric Stimulator (tDCS)
- (tDCS) Cortex: 2 channel Analog Brain Electric Stimulator (tDCS)
- (tDCS) Brain Stem: 8 channel Digital Brain Electric Stimulator (HD-tECS)
- (HD-ECS) Broca: AC & DC1 channel Brain Electric
- Stimulator (tECS)

#### **RF DATA MODULE**

Digital RF-Mode allows users to acquire, digitize, and save the RF (radio frequency) data from the ultra-high frequency ultrasound signal. Ultrasound transducers convert electrical signals into pressure waves which are transmitted into the tissue (transmit pulse). Differences in tissue density and speed of sound cause reflection and scattering of the transmit pulses, such that a portion of the sound waves reflect back towards the transducer. When these waves reach the transducer, they are converted into a receive electrical signal. The receive signal is composed of multiple reflections which combine together to form an interference pattern known as speckle. This receive signal is commonly referred to as RF data. RFarap is a low-cost portable ultrasound research system with direct software access to raw RF signals (ie. channel data). The system consists of an ultrasound front-end module with a USB3 interface. Fully programmable transmit, receive and processing functions predispose the system to research and educational applications.

#### MICRO ULTRASOUND

Micro-ultrasound is a miniaturized version of ultrasound with a wider range of applications, especially in research pertaining to small animal models. Smaller versions of imaging techniques boost the efficacy of the techniques, and also reduce the number of animals required for a particular study. The micro-ultrasound imaging tool has evolved over the past decade as a relatively inexpensive technique for studying small animal models. This in turn helps to analyze diseases in humans. The micro-ultrasound technique is widely utilized in various applications in cancer, developmental biology, and cardiovascular disease. In micro-ultrasound systems, sound waves are generated from transducers and then propagated through living tissues. Tissues reflect these sound waves which then come back to the transducer. The sound waves are then translated into two- and three-dimensional images. Micro-ultrasound techniques are very useful for research on small animals in frequency ranges of 15 to 80 MHz.

Processing

## **Products:**

#### HIFU

High-intensity focused ultrasound (HIFU) is a non-invasive therapeutic technique that uses non-ionizing ultrasonic waves to heat tissue. HIFU can be used to increase the flow of blood or lymph, or to destroy tissue, such as tumors, through a number of mechanisms. The technology can be used to treat a range of disorders and is at various stages of development and commercialization. The technology is similar to ultrasonic imaging, although lower frequencies and continuous, rather than pulsed waves are used to achieve the necessary thermal doses. However, pulsed waves may also be used if mechanical rather than thermal damage is desired. Acoustic lenses are often used to achieve the necessary intensity at the target tissue without damaging the surrounding tissue. An analogy is using a magnifying glass to focus sunlight; only the focal point of the magnifying glass has high intensity.

High Power Ultrasound exciter (HIFU): Suitable for research work on the destruction and destruction of prostate, breast and brain cancer cells with a power of 1 kW and excitation frequency of 1 kHz to 1 MHz

Medium Power Ultrasound exciter (MIFU): Suitable for rehabilitation and physiotherapy research with a power output of about 1 watt and excitation frequency band 1 kHz to 1 MHz

Low Power Ultrasound exciter (LIFU): Suitable for skin and beauty research as well as research in neuroscience and peripheral nerve stimulation with a power of approximately 1 kW and excitation frequency band 1 kHz to 1 MHZ

#### 32 CHANNEL SOUND RECORDER

The SR-32M16S is a simultaneous 32-channel mono recorder which can also been used as a simultaneous 16-channel stereo recorder. This device allows recording at 48KHz sample rate with 24-bit resolution. It has also the ability of saving recorded sounds in PCM, RAW, or Mp3 formats. One of the other key features of this recorder is the ability of designing and applying all kind of filters on every individual channel in an online way. Viewing the frequency spectrum of recorded as well as recording sounds, and online displaying recording signals make this device more effective. With SR-32M16S, it is also possible to schedule recording procedure.







## Iranian Tissue Product



## **Iranian Tissue Product**

The Iranian Tissue Product Company was established with scientific and executive supports of the faculty members and specialists from Tehran University of Medical Sciences in 2012. The company works under the Medical Equipment Development Center of the university. Following great success made in the production and presentation of allograft products in Iran, the company started producing allograft products by implementation and naturalization of modern sciences and application of international standards. The company products are the treatment of choice and gold standard in human body tissue lesion reconstructions (soft tissue and bone). They are utilized as scaffolds, volumizing agents, and biologic dressings in different medical fields. They have various applications in different medical specialties and fields, including orthopedic and spinal repair surgery, burning repair and plastic surgery, ENT and rhinoplasty, maxillofacial surgery and dentistry, dermatology, etc.







#### Cartilage

Allogenous donated tissue cartilages are processed from human costal cartilage or nasal septum. The product is presented as alcohol-soaked, radiated slices in three-layered packages for easy and proper use and forming. Most of the papers and references confirm the high durability of allogenous radiated cartilage products (autograft durability about 80%).

#### Fascia Membrane

The product is processed from human Fascia Lata and is available as lyophilized, radiated products in various sizes. Due to its flexibility, adhesiveness, and biocompatibility, it can easily be used at the operation site and causes volume enhancement and mechanical strength.

#### Acellular Dermis

Acellular dermis is processed from donated human skin and contains dermal collagen and elastic fibres. The product has become acellular using enzymatic and chemical treatment methods, so its antigenic properties are eliminated, while the natural structures of the collagen and elastic fibres, basal membrane, and the three-dimensional tissue structure are preserved. It provides a suitable scaffold for tissue regeneration and fibroblast implantation and proliferation.

#### Collagen Gel

Collagen gel is a filler made from allogenous collagen tissue sources and is provided in a cross-linked, radiated form. The product durability is higher than available collagen gels, because the primary source of this filler is the collagen obtained from human skin dermal layer, and it consists of type I and III high-density collagen fibres strengthened through the specific cross-linking process.

## Glycerolized Skin

Glycerolized skin is processed from donated human skin and contains dermal collagen and elastic fibers. The product has become acellular using enzymatic and chemical treatment methods, so its antigenic properties are eliminated, while the natural structure of the collagen and elastic fibers, basal membrane, and the three-dimensional tissue structure are preserved. It is presented in a glycerolized form as a biologic dressing to treat burning, trauma, and other complicated ulcers in different sizes.

#### Amnion

The product is processed from amniotic membrane and is available as a lyophilized, radiated product or frozen product, in various sizes. This unique product shows high efficacy in wound healing, so it has abundant applications in wound healing in various surgeries. The amniotic membrane consists of the epithelial cell layer, basal membrane, high-density collagen layer, fibroblast-like cell layer, and spongy layer.

## MBA Bone Block

The product is in the form of mineralized bone cube blocks and has a cortical surface with an approximate thickness of 1 to 2 mm. The cortical surface helps in product fixation. The remaining part of the product is made of cancellous bone.

### **DBM Matchstick**

The product is made of cancellous bone in demineralized form. It gains resilience and flexibility after being soaked in normal saline solution for 15 minutes. Due to the product's high porosity, it provides a wide scaffold surface for osteoblasts and osteocytes for bone regeneration.

## Fanavaran Jarahyar Sharif



# Fanavaran Jarahyar Sharif

Fanavaran Jarahyar Sharif with over a decade cumulative experience of its founding members, began its scientific and research activities from 2009 at Sharif University of Technology in order to provide the orthopaedic surgeons with cutting edge clinical engineering. The endeavours of our company has resulted in a number of national and international awards as well as the corresponding patents. We are proud to be the first company in Iran to have acquired (through research and in-house development) the required know how for Patient Specific preoperative planning and execution of a wide variety of orthopaedic surgeries. These include joint replacement surgeries and corrective osteotomies. Our Company has a very research-oriented ecosystem due to the presence of academics, orthopaedic surgeons, and talented biomechanical engineers at its core. In close and intimate interaction of them complements one another and is what has been driving the company forward ever since its establishment.







#### **DBM Putty**

The product is a combination of bone tissue protein matrix (Demineralized Freeze-Dried Bone Allograft (DFDBA)) with a particle size of less than 500  $\mu m$ , and hyaluronic acid carrier with doughy consistency for convenience in utilization by surgeons. It also shows osteoinductive properties due to bone growth factor (Bone Morphogenic Protein (BMP)). ic fibres causing flexibility. This collagen membrane results in product's unique features.

#### **MBA Granule**

The product has a white color and hard consistency. Due to mineral materials, it shows a long resorption time and also osteoconductivity. It can be a proper scaffold in bone defect reconstructions.

#### **DBM & MBA Powder**

#### **DBM & MBA Granule**

These products are a combination of mineralized and demineralized bone in ratio 7:3. They have osteoinductive and osteoconductive properties and can be used in treatment designs in various fields by surgeons.

#### Pericardium Membrane

The pericardial membrane has two soft surfaces with approximate thicknesses of 0.3 to 0.8 mm. The product is presented to clients in a lyophilized form, after physical and chemical treatments and becoming acellular.

#### Fascia Lata Membrane

The product is processed from human Fascia Lata and is available as lyophilized, radiated products in various sizes. Due to its flexibility, adhesiveness, and biocompatibility, it can easily be used in the operation site and causes volume enhancement and mechanical strength.

#### **Acellular Dermis**

The acellular dermis membrane (ADM) contains basement membrane on one of its surfaces. It can provide a dense and impenetrable layer against microorganism and pathogen penetration into deeper layers. So the membrane surface can stay exposed in high-perfused tissue of the oral cavity.

The product origin is the collagen membrane (skin dermal layer), which consists of strong collagen type I and III fibres that strengthen the product, and also elastic fibres causing flexibility. This collagen membrane results in product's unique features.

#### 3D Alignment Assessment of Lower Limb

In order to prepare the 3D alignment assessment report for each patient, it is necessary to take CT scan and X-Ray images of the lower limb containing the 6 corresponding joints. Having reconstructed the 3D model of patient's bones based on the CT-Scan, this is then transformed into a weight-bearing model using 3D to 2D registration utilising the standing X-Ray image.

#### **Preoperative Planning**

Choosing the optimum surgical approach can play a critical role in determining the outcome of a surgery. By having the 3D model of patient's anatomy and also a thorough report describing any possible deformity (quantitative description as opposed to only qualitative description), it is then possible for the surgeon to have the surgical approach he/she has chosen virtually simulated on the patient's anatomy in order to assess the outcome to ensure that it is in fact the best possible solution for this particular patient.

#### Patient Specific Osteotomy Guide

In order to correct the mal-alignment of lower limb and do the 3D simulation of the surgery, the 3 joint radiology image and the CT-Scan are required. 3D models of individual bones are reconstructed using the CT images and then made into a weight bearing model utilising the X¬Ray image. The resulting model is then used to simulate the necessary osteotomy surgery based on surgeon's desired approach and the 3D alignment assessment report.

The patient specific osteotomy guide is then designed based on the surgeon's plate of choice and is sent to the OR to be used in the surgery after sterilisation.

### Patient Specific TKA Guide

Based on the 3D assessment report and upon surgeon's request, the total knee arthroplasty surgery is simulated using three dimensional computer models of the knee prosthesis. Once the simulated surgery and the final positioning of femoral and tibial components have been approved by the surgeon, the patient specific guides are designed and manufactured using 3D printing technology. The guides are then handed to the surgeon to be used during the operation after sterilization.

Using PSI guides for TKA, the medullary cavity is not perforated, and positioning of the prosthesis is done in the most accurate manner.

#### **Anatomic Model**

Another service provided by Fanavaran Jarahyar Sharif is the preparation and 3D printing of patient's anatomic model in different scales. This complements our other services as it enables the surgeon to better assess the complexities of his/her patient's limb. The anatomic model allows the surgeon to completely prepare him/herself for the surgery and avoid any undesirable surprised in the OR. Benefits of having a highly detailed anatomic model at hand include:

- · Assisting in evaluation of patient's anatomy
- Optimising the surgical approach prior to the surgery
- · Checking the preoperative planning and the patient specific guide
- · Serving as a visual reference in the OR
- · Serving as a teaching aid for surgical residents in complex

#### Patient Specific maxillofacial Implant

Traditional methods for correcting maxillofacial defects (bone graft,...) have high revision rates, high risk of complications such as infection, postoperative hematomas and may cause poor clinical and aesthetic results.

In order to solve these problems, the company of Fanavaran Jarahyar Sharif has provided a new service includes the designing and manufacturing of Patient Specific maxillofacial Implants. These patient-specific implants suit the patient's anatomy perfectly and smoothly fill the defects thus restoring the aesthetic appearance of the patient.

At this service, After receiving patient's CT scan, by the help of medical image-based engineering software, the 3D model of implant is designed with regard to the patient's anatomy and phytology. Once the design has been approved by the surgeon, the final design is sent to the production team to start the manufacturing process using 3D printing technology.



## **Behin Negareh**



# **Behin Negareh**

We are a knowledge-based company which our main duty is producing high-tech Micro-CT systems. In 2019, we had two micro-CT system categories named "LOTUS-NDT" and "LOTUS-inVivo". We sold our first system 2 years after our company start-up to Tehran University of Medical Sciences Pre-Clinical Core Facility (TPCF). Now, they have the most active Micro-CT laboratory in the Middle East. Anyone who would know how our supports and routine services has been, is invited to look for any comments from our first customer (TPCF). After years of requests for single or multiple imaging services from students or individual scientists which couldn't have their own Micro-CT machines, we started our service center known as LOTUS Micro-CT Lab with our machines working all day. With a high increase in demands for imaging services, we refer our clients to our recent customers (e.g. TPCF Micro-CT lab). Thus, we have a two-way collaboration with all our customers. After installing one of our systems in any lab worldwide, we refer clients who want related imaging process to our customer's labs. Our pride is that our team think all the time to our credits and making our collaborative network impressive rather than any financial purposes. So we don't sell any single machine to our customers, we provide our customers a network of world-wide collaborations, well-known clients and finally a full supported system.

#### LOTUS-NDT

LOTUS-NDT is a high performance, stand-alone, fast, desktop NDT micro-CT with continuously variable magnification for scanning dense objects (micro-plugs, additive manufactured samples, etc.); Innovative combination of high resolution, big image size, 2D/3D reconstructions, and low dose imaging. The smart field of view (FOV) adjustment allows wide range of object size scanning. The variable magnification allows scanning all kind of samples with high spatial resolution down to 1 µm pixel size. Variable X-ray energy combined with a range of optional filters ensures optimal image quality for diverse research applications from digital core analysis to samples with metal implants. The LOTUS-NDT system enables micron-accurate gated and continuous rotating modes.

#### LOTUS-inVivo

LOTUS-inVivo provides extremely high-quality images with contrast-to-noise, resolution and dose performance optimized for pre-clinical imaging. Also, it is a high performance, standalone, fast invivo and ex-vivo micro-CT with continuously variable magnification for scanning small objects (teeth samples...). It has an unrivaled combination of high resolution, big image size, possibility for 3D reconstructions, and low dose imaging. The image field of view (up to 80 mm wide and more than 200 mm long) allows full object size scanning. The variable magnification allows scanning all kind of samples with high spatial resolution down to 10  $\mu$ m pixel size. Variable X-Ray energy combined with a range of optional filters ensures optimal image quality for diverse research applications from soft tissues imaging to bone and teeth studies.



### **Omid Institute for Advanced Biomodels**



## **Omid Institute for Advanced Biomodels**

Founded in 2012 as a CRO in the field of preclinical oncology, we established the first xenograft platform in Iran. Our efforts led to the development of a panel of cell line-derived xenograft models from different histotypes, including breast, colorectal, NSCLC, HNSCC, gastric, hepatic, and hematologic cancers. We introduced NOD-SCID-Gamma mice as the patient-derived xenograft (PDX) model. We have established and characterized the first PDX models from Iranian patients with colorectal cancer, Wilms tumor, urothelial carcinoma, and prostate cancer on these state-of-the-art immunodefficient mice. We are the first precision medicine clinic, named as Biomerker Evaluation and Supervision Team for Personalized Medicine (BESTforPM). The main objective of this clinic is to tailor the treatment plan of each patient based on the molecular characteristics of their tumor. In this regard, tumor specimens are assessed by NGS, IHC, and other relevant technics and after bioinformatics analysis, potentially beneficial and non-beneficial drugs are determined. Another field of activity of Omid Institute is in the field of neuroimaging analysis. This service includes a set of image-processing activities by unique software, so that the risk of iatrogenic damages during surgery becomes lower.







### Patient-Derived Xenograft (PDX) models

We have established the first biorepository of PDX tumors from Iranian patients with colorectal cancer, Wilms tumor, and urothelial carcinoma. These panels can be used in anticancer drug discovery programs and precision medicine.

Biomarker Evaluation and Supervision Service.

Chemotherapy, as a main cornerstone of cancer treatment, is only curative in one-fourth of cases. Such a low success rate relies on the heterogeneous nature of this disease. In this regard, we are witnessing a paradigm shift from one-size-fits-all strategy to precision medicine. The objective of precision medicine is to administer the right dose of the right drug for the right person at the right time. The first precision medicine clinic in Iran, named as Biomerker Evaluation and Supervision Team for Personalized Medicine (BESTforPM), was founded by our Institution. The main objective of this clinic is to tailor the treatment plan of each patient based on the molecular characteristics of their tumor. In this regard, tumor specimens are assessed by NGS, IHC, and other relevant technics and after bioinformatics analysis, the biomarker profile of each patient is discussed in our multidisciplinary molecular tomo board (MTB). The workflow has been depicted below.

## **Neuroimaging Analysis**

This division brings together an interdisciplinary group of specialists to employ various physiological, functional and structural neuroimaging methodologies in both research and clinical. The group benefits from collaboration of physicists, neuro-statisticians, neuroscientists, and neuro-radiologist who use fMRI, DTI, MRS, Perfusion/Diffusion, and structural imaging techniques in order to investigate neural mechanisms underlying cognitive functions in normal health and many disease conditions. The objectives include:

Imaging Protocol and Software development for various imaging applications.

Using multi-modality imaging systems (MRI) and quantification analysis methods such as DCE/DSC/DWI/DTI/QSM/MRS for brain mapping in different normal/abnormal brain states.

Functional and structural brain evaluation for various healthy/diseased/cognitive states of brain.



## Nano Hesgarsazan Salamat Arya



# Nano Hesgarsazan Salamat Arya

NanoHesgar is a privately-owned medical device company and was established as a knowledge-based company with the goal of manufacturing hi-tech products in cancer diagnostic and related fields. NanoHesgar is focused on finding a solution for challenges in cancer diagnosis, especially on micro metastasis cancer. The main objective of its establishment is to develop and commercialize innovative products in the field of Medical Device. In this regard, up to now, this company has focused its attention on the areas of In-Vitro and In-Vivo micro metastasis cancer diagnosis. NanoHesgar has a special point of view on international cooperation and looks for opportunities for boosting the business in a win-win cooperation with the other companies.

Our strategic and customer-focused approach to developing, producing and marketing high-quality affordable devices has successfully made us one of the first respected medical device companies (which developed high technology Nano electronic based device) in Iran. Collaboration, innovation, and scientific excellence are the main principles of our company.



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## **Product Name 1 Description**

Cancer Diagnostic Probe's (CDP) aim is to diagnose the presence of neoplastic cells in internal boundaries (Cavity side margins) of patients under gone breast cancer surgery. The system determines the hypoxia assisted glycolysis metabolism associated with cancer cells in a real time quantitative electrochemical manner. This probe is calibrated based on World Health Organization (WHO) ductal intraepithelial neoplasia (DIN) classification system. The main components of the device is briefly depicted below:





## Nano System Pars



# Nano System Pars

Established in 2008, it aimed at providing the latest technological apparatus needed in Nano research and Nano applications. Our instruments are characterized by an optimal combination of mechanics, electronics, and software. Only by in-depth harmonization of all three components, a good scanning probe microscope can be obtained. All main parts of our Scanning Probe Microscopes are of our own manufacture; this includes the electronics, our software, and naturally our mechanical design. This has the advantage that we are able to quickly make modifications in all parts of the instruments, should a certain application require such. All of our products are individually configured to meet the customer requirements. Our experienced team can handle even the development of a fully new construction in accordance with the customer specifications. For special applications we are in close dialog with our customers to find the best solution and also how to realize it in the shortest possible time frame. NANO System Pars was established in 2008, with the aim of providing the latest technological apparatus needed in Nano research and Nano applications.





### Scanning Probe Microscopy EDU

SPM-EDU Principle of Operation, Instrumentation and Probes Images obtained using an AFM OF SPM Images obtained using an STM OF SPM Catalog SPM.

#### AFM

#### AFM for Process Development / Control Applications

Atomic Force Microscopy is essential for process development and control applications in advanced technology industries including data storage, semiconductor, advanced material, polymer and photonics. Atomic force microscopes (AFM) are extremely high-resolution scanning probe microscopes, with demonstrated resolution of fractions of a nanometer, more than 1000 times better than the optical diffraction limit. Applications of AFM and other types of scanning probe microscopy continue to grow rapidly in number and include biological materials (e.g., studying DNA structure), polymeric materials (e.g., studying morphology, mechanical response, and thermal transitions), and semiconductors (e.g., detecting defects). In particular, AFM can be utilized to evaluate the surface quality of products such as contact lenses, optical components (mirrors, beam splitters, etc.), and semiconductor wafers after various cleaning, etching, or other manufacturing processes. What follows are AFM Workshop examples of measurements routinely made for process development and control.

### **Anti-vibration Table**

The natsyco Anti-Vibration Table helps provide a stable surface and reduces vibrations, shock and outside influences effecting devices placed on the granite working surface. Designed for the laboratory or metrology room the anti-vibration table is ergonomically styled yet built for durability. These workstations are designed for heavy instruments such as electron microscopes, which require high degrees of isolation from vibrations. They comprise a highly rigid platform supported on a sturdy isolation frame fitted withlevelling feet. The resultant plate has excellent compliance characteristics and its rigidity is suitable for supporting large loads up to 70kg.

### Hyperthermia

There are many techniques for hyperthermia involving laser, ionizing radiation, and microwaves as tools to heat up body (malignant) tissues. Although these techniques are capable of rising the intracellular temperature up to the cellular death, they may have unwanted collateral effects such as ionization of genetic material (radiation) or lack of selectiveness (microwaves) that affect the surrounding healthy tissues. A different approach, developed mostly along the last decade, is the selective thermo-cytolysis based on the process of magnetic losses. This strategy, called magneto-thermo-cytolysis or magneto-thermoablation, is a promising technique thanks to the development of precise methods for synthesizing functionalized magnetic nanoparticles (FMNPs). Magnetic nanoparticles with functionalized surfaces (to attach with high specificity to a given tissue) are used for hyperthermia treatments seeking their accumulation only in tumor tissue. Depending on the success in solving this biochemical and physiological challenge, cancerspecific hyperthermia protocols could be developed. In 2010, magnetic hyperthermia trials based in the use of MNPs have passed preclinical stages and received regulatory approval as a new clinical therapy named thermotherapy.

#### EDUCATIONAL SCANNING TUNNELING MICROSCOPE

Opens the doors for all the students and trainees to explore into the nano-world much earlier and easier than it used to be. Imaging of atoms (If all conditions for atomic resolution be ready), characteristics of nanostructures, nano morphology of conducting surfaces, nanostructuring by self organization and or self assembled mono or multi layer (SAM), can be seen by undergraduate students through their own hands-on operation.

## Sina Robotics and Medical Innovators



## Sina Robotics and Medical Innovators

Sina Robotics and Medical Innovators Co., Ltd., is a private company, founded in 2015 as a spin-off from Tehran University of Medical Sciences and Sharif University of Technology. The main program of the company is to design, fabrication and developing of advanced and innovative medical equipment in the field of medical education, diagnostic, treatment and post-treatment care based on medical robotics. In this field, so far, the company provided wide a range of products including surgical robots, surgeon-assistant robots, assistive and therapeutic rehabilitation robots, and medical training and diagnostic systems. All products have been accurately evaluated by several medical and educational centers in Iran and are in process of entering the international markets. The company has more than 15 years of background in research and development conducted by its young and hardworking personnel who are motivated to improve health care services using medical robotics technologies.



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## Sina\_Straight: Robotic Tele-Surgery System

Sina is a complete robotic telesurgery system with force feedback which can be used for performing remote surgery operations through internet or other communication channels. This system has two main subsystems including a master robotic console at surgeon's side and a slave robotic system at patient's side with two robots which are installed on the sides of a specific surgery bed.

A robotic cameraman called RoboLens is also integrated into the system to take the intraabdominal images of the patient and send them to the surgeon's master console. The master robots receive the surgeon's hands movements and transmit them to the patient's side slave robots that mimic the movements in a real-time manner. Simultaneously, the slave robots measure the robot and patient interaction forces/torques, including the pinch forces under instruments jaws, and transmit them to the surgeon's side master robotic system.

## Sina\_Flex: Robotic Tele-Surgery System

SinaFlex is a robotic surgery system which can be used for performing abdominal surgery operations in an ergonomic posture for surgeon and also remotely through internet or other communication channels. This system has two main subsystems including a master robotic console at the surgeon's side and a slave robotic system at patient's side.

The master robots receive the surgeon's hands movements and transmit them to the patient's side robots that mimic the surgeon's hand movements in a real-time manner. Simultaneously, the slave robots measure the robot and patient interaction forces/torques, including the pinch forces under instruments jaws and transmit them to the surgeon's side master robotic system. As a result, all tool-tissue interaction forces are fed backed to the surgeon's hands. This system has the advantages of high accuracy and quality of surgery, less incision for patients and more ergonomic posture for surgeons.

## RoboLens: Laparoscopic Surgery Assistant Robot (Bedside model)

RoboLens may hold and maneuver the laparoscopic lens as a surgeon's third hand. Using the RoboLens, surgeons may perform solo-surgery procedures very faster than conventional methods which using a human assistant.

#### LP Sim: Robotic Lumbar Puncture Simulator with Force Feedback

LP Sim is a robotic system that may be used for education and evaluation of LP skills using virtual reality environment with force feedback. It is designed to maximize efficiency in LP skills acquisition and evaluation for medical residents. Using LP Sim, Students can feel lifelike haptic feedback of passing each layer from this device while viewing a full 2D representative of spinal cord to ensure highest level of education quality. The magnitudes of forces are adjusted for sense different layers including Skin, Subcutaneous fat, Supraspinous ligament, Interspinous ligament, Ligamentum flavum, Epidural space and Dura, same as inserting needle in human spine.

#### Sina Sim: Laparoscopic Surgery Simulator

Sina Sim is a combination of computer hardware, mechanical user interface and software modules which simulate the procedures and environment of Laparoscopic surgery, based on Virtual-Reality environment. This system not only greatly reduces the maintenance cost of training surgeons, but also will ensure maximum efficiency in learning laparoscopic surgery skills.

### Lp Model: Lumbar Puncture (Epidural/Spinal) Training Model

Every single method of diagnostic and therapeutic has the risks of its own; hence the Lumbar Puncture is not safe either. The main risk that threatens the patients in the Invasive operation is the probability of any contact happening in between the epidural catheter and the cord tissue, which may cause serious harm and pain. The lumbar puncture model has been designed to eradicate the risk of harm to the patients. It has been designed by medical education specialists to allow students and medical professionals to practice as frequently as enough and to achieve high levels of procedural competence and to enhance formal LP procedural skills abilities via training and assessment.

The lumbar puncture model simulates the lumbar spine's L2 to L5 because as you move downwards from L1 the caudal equine can be encountered and thus the risk of spinal cord injury reduces significantly. The spinal cord inside the cover is called the meninges and the fluid that fills the space between the spinal cord and the meninges is called the cerebrospinal fluid. In fact the cerebrospinal fluid is between the spine and the cord tissue which are the features simulated in our model. usually, as soon as the tip of the epidural catheter passing the meninges reaches the cerebrospinal fluid, fluid sample is taken and if the amount of sample collected isn't enough it can be ensured for an extra 2 to 3 mm (in individual cases). In this state a few drops are taken from the cerebrospinal fluid and then the needle is ejected.

### IV Model: Intravenous injection and blood sampling training model

This Intravenous Injection and Blood Sampling Training Model has been designed to give less experienced trainers the ability of frequent practice before confrontation with the patient's arm so that it can enhance their experiences in different techniques ranging from confirmation of the injection site to inserting hypodermic needles and the injection of medicine. The needle insertion provides a feeling similar to that offered by a real human arm, thus the pressurized blood vessel can be palpated. The blood vessel tube is durable enough to be used in numerous injection practices.



## Zist Abzar Pajoohan





# Zist Abzar Pajoohan

Zist Abzar Pajoohan Company was constituted 8 years age. The main goal of the company is localization of the new technologies for production and commercialization of diagnostic kit and laboratory equipment.

The main product includes: 1. Pregnancy diagnostic rapid test based on gold nanoparticles 2. Morphine -amphetamine and methamphetamine diagnostic rapid tests based on gold nanoparticles 3. Diagnostic Ovulation serum 4. Confirmatory test for drug abuse based on meso -porous silica 6. Automated solid phase extraction for drug abuse detection 7. Purification nucleic acid kites based on Nano fiber silica 8. Automated extraction and purification chemical and biological molecules apparatus 9. Automated immune Eliezer based on Nano fiber







#### Pregnancy Test Kit-RIMA

A Rapid one step immunochrmatographic Cassette test for the detection of Human Choronic Gonadotropine

#### Pregnancy Test Kit (Stripe)-RIMA

A Rapid one step immunochrmatographic test for the detection of Human Choronic Gonadotropine

#### Pregnancy Test Kit (Midstream)-RIMA

A Rapid one step immunochrmatographic Cassette test for the detection of Human Choronic Gonadotropine

#### Ovulation test kit-14th Day

A Rapid one step immuno chrmatographic test for the detection of Human Choronic Gonadotropine

#### Morphine Test Stripe

A Rapid one step immunochrmatographic test for the detection of MORPHINE in Human Urine

#### **Amphetamine Test Stripe**

A Rapid one step immunochrmatographic test for the detection of AMPHETAMINE m Human Urine

#### Met-Amphetamine Test Stripe

A Rapid one step immunochrmatographic test for the detection of MET-AMPHTAMINE in Human Urine

#### Methadone Test Stripe

A Rapid one step immunochrmatographic test for the detection of MET ADO NE in Human Urine

## Cannabinoids Test Stripe

A Rapid one step immunochrmatographic test for the detection of CANNABINOIDS m Human Urine

#### 3-Panel Multi Drug Test

A Rapid one step immunochrmatographic test for the detection of MORPHINE / AMPHETAMINE / MET AMPHETAMINE in Human Urine

#### 5-Panel Multi Drug Test

A Rapid one step immunochrmatographic test for the detection of MORPHINE / AMPHETAMINE / METAMPHETAMINE / METAMONE / CANNABINOIDS in Human Urine







## SABZ Biomedicals



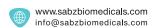


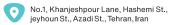
## **SABZ Biomedicals**

SABZ Company was established in 2009 and certified in 2014 as a science-based company. The main focus of the company is manufacturing regenerative medicine products, laboratory supplies and software with high standards and optimum function.

- · Conducting clinical trials based on engineered tissues and cell products.
- Manufacturing regenerative medicine products (cell, tissue, scaffold) for clinical use.
- Consultation for establishing stem cell therapy centers, constructing clean rooms, and quality management systems.
- Organizing workshops and training sessions related to regenerative medicine and current laboratory techniques.
- · Production of laboratory supplies, research products, and professional diagnostic software.







#### SABZ Dress SB-12001

SABZ Dress is a biological dressing made up of human amniotic membrane. The product has a unique and special composition of a variety of growth factors that promote the repair or replacement of the injured epithelial cells.

#### SABZ Bone SB-12003

This implant is from bone tissues donated by individuals that are deceased, or they are obtained from remnants of tissues following surgery after obtaining ethical and legal authorization. Clinical Grade Cell Products.

#### Clinical Grade Cell Products

Human Bone Marrow Derived Mesenchymal Stem Cells SB-11001

In recent years, cell therapy and tissue engineering has reached a significant importance in modem medicine. One of the essential parts of cell therapy is the maintenance and expansion of cells in culture for clinical applications.

#### Human Cord Blood Mesenchymal Stem Cells SB-11002

In recent years, cell therapy and tissue engineering has reached a significant importance in modem medicine. One of the essential parts of cell therapy is the maintenance and expansion of cells in culture for clinical applications.

#### Human Placental Mesenchymal Stem Cells SB-11003

In recent years, cell therapy and tissue engineering has reached a significant importance in modern medicine.

## Human Endometrial Mesenchymal Stem Cells SB-11004

In recent years, cell therapy and tissue engineering has reached a significant importance in modem medicine.

### Human Adipose Tissue Derived Mesenchymal Stem Cells SB-11005

In recent years, cell therapy and tissue engineering has reached a significant importance in modem medicine. One of the essential parts of cell therapy is the maintenance and expansion of cells in culture for clinical applications.

#### Human Skin Fibroblasts SB-11006

In recent years, cell therapy and tissue engineering has reached a significant importance in modem medicine. One of the essential parts of cell therapy is the maintenance and expansion of cells in culture for clinical applications.

#### Wharton Jelly Mesenchymal Stem Cells SB-11007

In recent years, cell therapy and tissue engineering has reached a significant importance in modem medicine. One of the essential parts of cell therapy is the maintenance and expansion of cells in culture for clinical applications.

#### CO2 Incubator SB-14012

This instrument controls temperature, humidity and CO2 for optimum cell culture condition.

## Image Pad M1SB-14017

This instrument has the simultaneous functions of both gel doc and Western blot imaging systems. It allows the visualization of DNA electrophoresis gels and chemiluminescence protein bands with high quality images.

#### Gel documentation system SB-14006

This instrument allows for high quality visualization and recording of DNA bands. In addition, the UV Transilluminator can be moved on a rail to allow direct examination of the DNA bands for cases where the gel needs to be cut for isolation of specific DNA bands.

### Western blot imaging system SB-14007

In routine Western blotting, several time- and labor-intensive steps should be followed for the development of X-ray sensitive films. In addition, it requires different reagents and access to a dark room.

#### **PCR Workstation**

This system provides a separate space with an air filtration system during preparation of PCR samples, which reduces the risk of contamination and false positive results: type ISB-14008a and type IISB-14008b

#### All in one electrophoresis system SB-14001

In this system, the electrophoresis tank, power supply, and transilluminator are combined. Instead of using three different instruments, we have one multi component system, which substantially reduces the space required for post PCR steps.

## Horizontal Electrophoresis Tank

Horizontal electrophoresis tanks are provided in three different sizes: (Small Size) SB-14005a

#### (Medium Size) SB-14005b, (Big Size) SB-14005c

SABZ Animal Lab (Pre-assembled, ready to use animal laboratory) SB-15001

Laboratory animals are an integral part of biomedical research. However, establishing a standard laboratory animal is a big challenge for some scientific centers. To overcome this issue, SABZ has established a small standard portable animal lab for short-term use.

## KaryoVision® Karyotyping System SB-18002

KaryoVision® is powerful and efficient software for analyzing and reporting cytogenetic tests.

## LadderVision® Electrophoresis Image Analysis Software SB-18003

This software is for analyzing gel electrophoresis images. The bands are automatically detected, and densitometry can be performed to compare different bands with each other or with a standard to estimate the concentration of DNA or protein in a given band.

## SinaCell





## **SinaCell**

Progress of increasing research in stem cell and tissue production technology as well as changes of treatment process towards personalized medicine, made some researchers in stem cell and tissue production field to think up regarding production of stem cell and tissue for therapeutic and research uses in sterile and suitable environment as the first time in Iran and providing associated commercialization trends. For this purpose, SinaCell as a research and manufacturer company has been established in 1386, began its carrier with universities approved research projects in the field of stem cell treatment. Afterward, company signed technology procurement contract with Germany in the field of tissue production to treat damaged cartilage of the knee, in addition to signing a contract with Austria for training staff to produce cartilage, subsequently, cartilage production technology has been implemented in company.

SinaCell is the first company who achieved Ministry of Health GMP (Good Manufacturing Product) confirmation to produce stem cell, cartilage, amniotic membrane, fat cells and Platelet-rich plasma.

One of the SinaCell priorities is to meet the demand of patients in need of stem cells to cure them. It can be applicable upon permission of Ministry of Health. However, the company continues its cooperation with universities and scientific centers to carry out research projects in the field of stem cells and tissue.





#### Stemsin TM

Stemsin TM is a human mesenchymal stem cell product. Mesenchymal Stem cells are undifferentiated cells that can self-renewed, differentiate to the different kinds of cells like cartilage cells, bone cells, fat cells, nerve cells and muscle cells and etc. In adult, stem cells could be found in various specialized tissues including; the brain, bone marrow, umbilical cord blood, liver, synovium, Wharton's jelly, fat tissues and even dental pulp. Because of their accessibility and simple isolation, the usual sources of stem cells for laboratory operations are fat tissue, bone marrow and Wharton's jelly Nowadays stem cell therapy has been used in many degenerative disease like: autoimmune (MS, ALS), cardiovascular disorders, neurological disorders (Alzheimer, Parkinson), bone and cartilage injuries and even cancers

- · Secretion of immunomodulator, inflammatory factors and growth factors
- · Ability to migration to damaged tissue
- · Ability to differentiation to adult cells
- Evading the immune system and suppressing the immune response
- · Stimulating endogenous healthy cells in damaged tissue

#### Allo-Stemsin TM

Allo-Stemsin TM is a human mesenchymal stem cell product. Mesenchymal Stem cells are undifferentiated cells that can self-renewed, differentiate to the different kinds of cells like cartilage cells, bone cells, fat cells, nerve cells and muscle cells and etc. Nowadays stem cell therapy has been used in many degenerative disease like: autoimmune (MS, ALS), cardiovascular disorders, neurological disorders (Alzheimer, Parkinson), bone and cartilage injuries and even cancers. Since these cells have the ability to evade the immune system can also be used as Allogenic forms. This features is important in old persons, because their cells have not good growth and in children due to difficult sampling. They capable of alleviating or even curing some disease due to; '-Secretion of immunomodulator, inflammatory factors and growth factors 'I' -Ability to migration to damaged tissue r -Ability to differentiation to functional cells 'f-Evading the immune system and suppressing the immune response t:\_\_Stimulating endogenous healthy cells in damaged tissue

#### Cell-Amniosin™

Cell-Amniosin  $^{\text{TM}}$  is a IR.Iran-FDA approved product and its production line is GMP approved by the IR.Iran Ministry of Health.

Cell-Amniosin™ is a cryopreserved cellular human amniotic membrane-derived biological dressing. Human placental membranes are a rich source of MSCs, collagen matrix, and growth factors and also they contain different bioactive factors such as Fibronectin, Laminin, Proteoglycan and glycosaminoglycan, therefore they can support tissue regeneration and repair.

#### Cartisin™

Cartisin™ is a new product in the field of cartilage tissue repair which is combination of an individual cell with a three-dimensional matrix and possibility to replace with damaged tissue. After transplantation and replacement in tissue, this product underlies a natural environment, facilitate and accelerate the production process of collagen type II with high quality of the cells activity. Aartificial cartilage (Cartisin™) in form of transplanted parts 2.5 up to 10 cm² has been used to treat in joints design and provide a natural environment for the growth and activity of chondrocyte cells that produce collagen type II. This product is presented as solid product which is a good alternative for knee cartilage repair in athletes and people under 50 years.

#### Sinaderm™

Sinaderm<sup>™</sup> is cryopreserved human fibroblast derived dermal substitute; it is composed of fibroblasts, extracellular matrix, and a bio absorbable scaffold. Due to the containing of different biological factors, Sinaderm<sup>™</sup> has a Reconstructive role as a biological dressing. The Sinaderm<sup>™</sup> has been shown to provide four elements to the chronic wound repair process:

- Supply of different bioactive extracellular matrix components such as collagen, Fibronectin, Laminin, Proteoglycan and glycosaminoglycan.
- Function as a permissive, performed, normal human matrix for keratinocyte and fibroblast migration and proliferation.
- Release cytokines capable of reducing chronic wound inflammation.
- Provide fibroblast-derived cytokines, particularly angiogenic growth factors.



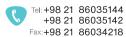
## **Tanin Pardaz Pasargad**



# **Tanin Pardaz Pasargad**

Tanin Pardaz Pasargad is a knowledge base company, founded in 2013, based on its long history of research and development of its engineering and medical team. The company's primary focus is on diagnostic and treatment hearing systems and provides products and services in the following areas:

- · Cochlear implant systems
- · Diagnostic Hearing systems
- · Electrical and acoustical stimulation systems
- · Provide engineering consulting services
- · holding educational courses







3rd floor, No.9, Sepid alley, Poormusa st, Somayeh st, Tehran, Iran

## Aditory Electrical Stimulator Unit (AES)

Multipurpose and programmable electrical tools is capable of producing an electric current with sinusoidal, square, triangle, and combination of these wave forms. thus, in the following areas, and considering effective impedance (between 5 and 15 kilos ohm), it is able to apply the current to detect and relieve biological systems. Trans-tympanic promontory stimulation test (TPST), use of research in the field of tinnitus and capability to use for recording of electrical auditory brain-stem response (EABR).

The device has two parts, hardware and software. A software is designed as a user interface which installed on PC and help user to do a lot of operations for creating a desired electrical simulation easily utilizing software menus. The data transferred via serial port and network to hardware and finally the simulation is done through an active electrode that located in auditory canal and a passive electrode that can be placed on the mastoid or forehead.

RISK CLASS: B (Low moderate risk)

### External cochlear implant system for the deaf (Tapps+)

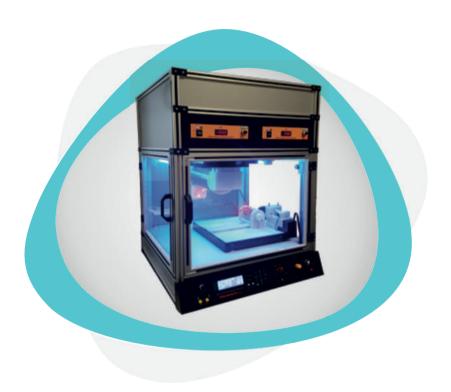
Tapps+ as an Iranian product is ready to compete with similar foreign products. Being integrated, having modem design, ability to be used in long-term with power bank. Having up-to-date technology and high-quality producon are the special features of this product.

- · One omni direc Donal microphone
- · AutomaDc volume control with AGC
- · Manual volume control with switch
- · Manual sensiDvity control with switch
- · Failure indicator alarm LED
- · ElectrostaDc discharge protection (ESD) class 4.0





## Fanavaran Nano Meghyas



# Fanavaran Nano Meghyas

Fanavrane Nano-Meghyas is a knowledge based company and its goals are the development of nanofibers technology and its application. FNM's products and services are the design and production of electrospinning systems with various accessories including High Voltage power suppliers and Syringe Pumps in lab, pilot and industrial scales for medical respiratory Mask, powerplant and automotive air and oil filters based on nano fibers.







No. 42- West 4th Street, Golgoon Industrial town, 5th km Shahriar Road, Karaj old Road, Tehran, Iran

### Industrial Electrospinning machine

FNM Industrial Nanofiber Production Line (INFL) is a polymeric/ceramic nanofibers producer machine in industrial scale for various applications. INFL uses 4 to 8 electrospinning units, based on the customer requirement. In the industrial production line, the electrospinning parameters and conditions such as spinneret and collector parameters, working distance, linear movement speed of the used substrate, working temperature and operation time could be controlled using an integrated advanced control system. The machine offers excellent safety for users with respect to the handling of high voltage power supplies and chemical solvents.

## Pilot-scale Electrospinning machine

FNM Pilot-Electroris machine (NFL60R), which has 1 electrospinning unit, 1s a polymeric/ceramic nanofibers producer machine in pilot (semi-industrial) scale for various applications. In pilot-electroris, the electrospinning parameters and conditions such as spinneret and collector parameters, working distance, linear movement speed of the used substrate, working temperature, operation time, and the value of applied high voltages (positive and negative) could be controlled using an HMI control panel. The machine offers excellent safety for users with respect to the handling of high voltage power supplies and chemical solvents. The pilot electrospinning machine has been designed and built to coat various substrates. Applying high voltage to the solution forms hundreds of polymer jets to the collector that is located on top of the spinneret. Finally, a layer of nanofibers forms on the collector. Using this machine, nanofibers could be deposited on different substrates in pilot scale. Nanofiber coating rate on different substrates is about 0 - 150 m2/h using this machine.

### Lab scale Electrospinning unit (Electroris)

Electroris® is a lab-scale electrospinning machine to prepare polymeric/carbon/ceramic nanofibers with diameter range of 50 nm to a few microns. The machine mainly consists of metallic body, syringe pump, spinneret system, collector system and high voltage power supply. Two different types of Electroris are available: Standard and dual pump model (Side by Side Electroris). This machine employs a panel for controlling electrospinning parameters including injection rate of polymeric solution, electrospinning distance, rotating speed of collector drum, working temperature (room temperature to 45°C) and working time. Electroris® provides excellent safety schemes for the users with respect to the handling of high voltage power supply and chemical solvents.

#### Dual Pump Electrospinning Machine (Side by Side Electroris®)

Electroris® is a lab-scale electrospinning machine to prepare polymeric/carbon/ceramic nanofibers with diameter range of 50 nm to a few microns. The machine mainly consists of metallic body, syringe pump, spinneret system, collector system and high voltage power supply.

Two different types of Electroris® are available: Standard and dual pump model (Side by Side electroris®).

In side by side Electrospinning system, there are two syringe pumps on both sides of the rotating collector drum, making the system to consist of 2 syringe pumps, 2 scan systems, 2 distance adjusters and 2 high voltage power supplies. Even though the production rate of dual pump model is two times higher compared to the standard one, this is not its main advantage. In these systems two different materials could be electrospun simultaneously. Furthermore, the system makes it possible to electrospin polymeric material from one side and additive materials, such as medications, from the opposite side, producing composite nanofibers containing desired components. Therefore, it is suitable for pharmaceutical, medicinal, biological, applications and etc.

This machine employs a panel for controlling electrospinning parameters including injection rate of polymeric solution, electrospinning distance, rotating speed of collector drum, working temperature (room temperature to 45°C) and working time. Electroris® provides excellent safety schemes for the users with respect to the handling of high voltage power supply and chemical solvents.

#### Yarn Electrospinning Machine

Electroris-CEM has been designed and manufactured for the production of nanofibers in large quantities. In this machine, a cartridge is used to feed the spinning wires. The polymer solution is poured into the cartridge reservoir, the scanning system moves cartridge and feeds the wires with polymer solution uniformly. By applying a high voltage to spinning wires, hundreds of nanofiber jets accelerate from the surface of wires to the collector which is connected to high voltage with the negative charge, in the end, a layer of nanofiber formed on the collector. Electroris-CEM can control the electrospinning parameters and conditions including electrospinner drum and collector rotating speed, working distance, feeding rate, working temperature (room temperature to 45°C) and operation time. Electroris-CEM® has sufficient safety for users with respect to the handling of a high voltage power supply and chemical solvents.

### Cartridge Electrospinning Machine

Electroris-CEM has been designed and manufactured for the production of nanofibers in large quantities. In this machine, a cartridge is used to feed the spinning wires. The polymer solution is poured into the cartridge reservoir, the scanning system moves cartridge and feeds the wires with polymer solution uniformly. By applying a high voltage to spinning wires, hundreds of nanofiber jets accelerate from the surface of wires to the collector which is connected to high voltage with the negative charge, in the end, a layer of nano fiber formed on the collector. Electroris-CEM can control the electrospinning parameters and conditions including electrospinner drum and collector rotating speed, working distance, feeding rate, working temperature (room temperature to 45°C) and operation time. Electroris-CEM ® has sufficient safety for users with respect to the handling of a high voltage power supply and chemical solvents.

#### High Voltage Power Supply - OV Series

High voltage power supplies (HVPSs), manufactured by Fanavaran Nano-Meghyas Co. Ltd. (FNM) offer small and lightweight packages, making them suitable for demanding laboratory and OEM applications such as capacitor testing, free-electron laser, ion implantation, physical vapor deposition, capillary electrophoresis, electrospinning, ion-beam assisted deposition, and ion sources. These supplies also feature a 1000: 1 voltage monitor, scaled to match most common 1 0MQ handheld voltmeters. The capacitors are fully embedded in solid resin for protection against humidity and environment.

### High Voltage Power Supply- OC Series

High voltage power supplies (HVPSs), manufactured by Fanavaran Nano-Meghyas Co. Ltd. (FNM) offer small and lightweight packages, making them suitable for demanding laboratory and OEM applications such as capacitor testing, free-electron laser, ion implantation, physical vapor deposition, capillary electrophoresis, electrospinning, ion-beam assisted deposition, and ion sources. These supplies also feature a 1000: 1 voltage monitor, scaled to match most common 1 0MQ handheld voltmeters. The capacitors are fully embedded in solid resin for protection against humidity and environment.

## High Voltage Power Supply - D-RC Series

High voltage power supplies (HVPSs), manufactured by Fanavaran Nano-Meghyas Co. Ltd. (FNM) offer small and lightweight packages, making them suitable for demanding laboratory and OEM applications such as capacitor testing, free-electron laser, ion implantation, physical vapor deposition, capillary electrophoresis, electrospinning, ion-beam assisted deposition, and ion sources. These supplies also feature a 1000: 1 voltage monitor, scaled to match most common 1 0MQ handheld voltmeters. The capacitors are fully embedded in solid resin for protection against humidity and environment.

#### Syringe Pump SP3000

FNM syringe pumps are designed as a low-cost units, capable of holding 2 or 10 syringes of any make from  $10\mu 1$  to 50ml. These syringe pumps are ideal for delivering accurate and precise amounts of fluids for a multitude of syringe pump applications including electrospinning, infusing calibration into a mass spectrometer or reaction chamber, long term drug infusion to animals and general infusion applications.

## Syringe Pump SP102

FNM syringe pumps are designed as a low-cost units, capable of holding 2 or 10 syringes of any make from  $10\mu 1$  to 50 ml. These syringe pumps are ideal for delivering accurate and precise amounts of fluids for a multitude of syringe pump applications including electrospinning, infusing calibration into a mass spectrometer or reaction chamber, long term drug infusion to animals and general infusion applications.

## Syringe Pump SPIIO

FNM syringe pumps are designed as a low-cost units, capable of holding 2 or 10 syringes of any make from  $10\mu 1$  to 50ml. These syringe pumps are ideal for delivering accurate and precise amounts of fluids for a multitude of syringe pump applications including electrospinning, infusing calibration into a mass spectrometer or reaction chamber, long term drug infusion to animals and general infusion applications.

### Capillary electrophoresis

Capillary electrophoresis (CE) is a separation and analytical method of which the differential migration rates of sample components is caused by an applied electrical field within a capillary, small-diameter polyimide coated fused silica capillary tube usually. "Oncolumn" UV spectrometric or fluorescence analysis is usually used for detection of sample components through a "window" in the capillary. CE is a powerful technique having a wide range of applications including; analysis of proteins, peptides, chiral compounds, pharmaceuticals, inorganic ions, and specially sizing and characterization of nanomaterials.

Fnm's Capillary electrophoresis (CE) is designed based on its minimal sample and solvent requirements, rapid analysis time and high efficiency and resolution useful in many laboratories. It covers a broad range of applications in a wide variety of industries. Some of its main application fields include: i) food analysis, ii) pharmaceutical analysis, iii) bioanalysis, iv) environmental pollutants analysis, and v) nanomaterial analysis.

Principle of operation: Capillary electrophoresis (CE) is a family of related separation techniques that use narrowbore fused silica capillaries to separate a complex array of large and small molecules. High voltages are used to separate molecules based on differences in charge, size and hydrophobicity. Injection into the capillary is accomplished by immersing the end of the capillary into a sample vial and applying pressure, vacuum or voltage. Separated solutes are quantitatively detected at the capillary outlet by high sensitive optical system based on direct or indirect UV absorbance.





## Dorsa Behsaz (DorsaTech)



# Dorsa Behsaz (DorsaTech)

Dorsa Behsaz provides a comprehensive range of tailor-made laboratory glassware and science laboratory equipment (spray dryer, freeze dryer, chemical pilot Reactor, Extruder-Spheronizer).

We are committed to be precise, agile and stay focused on the quality, to meet consumer requirements, satisfaction at a reasonable and competitive price.







## **Laboratory Spray Dryer**

Spray dryer Equipment in which the material to be dried is sprayed as a fine mist into a hotair chamber and falls to the bottom as dry powder. The period of heating is very brief and so nutritional and functional damage are avoided. Spray drying is a widely applied process technology in the chemical, food and pharmaceutical industries. It is a single unit operation rapidly transforming liquids (solutions, emulsions, slurries, pastes or even melts) into powders in one simple and robust continuous process.

### **Laboratory Freeze Dryer**

Freeze drying has been used in a number of applications for many years, most commonly in the food and pharmaceutical industries. With freeze drying, sensitive, unstable or heatsensitive materials can be preserved without damaging their physical structure. This also enables biologicals to be handled easily without risk of contamination and allows them to be transported cheaply as there is no need for refrigeration or conventional freezing.

#### **Double Jacketed Glass Reactor**

Jacketed Glass Reactors are designed for synthetic reaction of different types of materials in a controlled temperature. Glass reactors are commonly used in petrochemical, rubber, pesticide, dye, pharmaceutical, nitration, hydrogenation, alkylation, polymerization, condensation and other processes, as well as many other processes for organic dyes and intermediates.

### Laboratory Extrusion and Spheronization

Pellets Extruder and Spheronizer In the production of pharmaceutical preparations, the advanced technology of extrusion and spheronization, as the advanced technologies applied widely in international pharmaceutical industry. This process is primarily used as a method to produce multi-particulates for controlled release application.





# Also in this category, companies that will be presented in the future version of this catalog are:

- 1 Tajhiz Afrinan Nouri Parse
- 2 Teb and Sanat Rahyab
- 3 Noavaran System Tasvirbardari Parse
- 4 Raymon Dana Danayan
- 5 Ana Gene Biotech

## **Dental Equipment and Biomaterials**

Dana Well Inc Kavoshgaran Salamat Bonyan Navateb Pars



#### Dana Well Inc



#### **Dana Well Inc**

DanaWell Inc. is dedicated to the rapid technological growth in the field of biomedicine and biomechanics to improve the quality of medical services. Dana Well Biomechanical group provides the most trusted and accurate numerical modeling and simulation in order to use in diagnostic process by physicians. In addition, the team of biomaterial process and engineering focuses on the implantable and regenerative therapies by merging advances besides biology and engineering sciences. Our team has accumulated several years of research and development experience in close collaboration with qualified physicians. Our research and development facilities are placed on the Development Center of Tehran University of Medical Science (TUMS).







Dental Equipment and Bio-material Technology Incubation Center, Tehran University of Medical Science, Tehran, Iran Postcode: 1417614361

#### 3D Printed Biodegradable Scaffold

A link between tissue and engineering

Multi-functional scaffolds customized according to the data acquired from the medical scans to match each patient's individual needs, meet the structural, mechanical, and nutritional requirements based on optimized models.

#### Features:

- Using patient specific anatomical data (Personalized Regenerative Medicine) Threedimensional scaffolds with complex geometries and very fine porosities Desired structural integrity Controlled macro architecture as well as micro structures controlled spatial distribution of cells and growth factors Better cell adhesion
- Engineered gradients of scaffold materials the possibility of sterilization Applications:
- Pre-surgical visualization model Tissue engineering
- · Drug delivery systems Regenerative medicine

#### **Biofluids Simulation and Modeling**

The Biofluids flow and also structural problems are simulated according to the modem science and novel numerical models in Dana Well Co. So far, the company completed projects include:

· Study on the anomalies of Circle of Willis in brain and its effects in the surgery

The functionality of Circle of Willis in adjusting blood flow supply to the different parts of brain in the normal and abnormal conditions is vital. The anomalies cause deviation in these functionalities, which can be important in problematic cases, such as surgery of aneurysm. Dana Well team has provided accurate simulation package of blood flow using advanced CFD techniques. The physicians has found the results of our simulations helpful in different manner, such as prediction of stress distribution on the aneurysm sac and etc.

 Simulation of temporary clipping effects on the blood flow characteristics in Circle of Willis and branches.

Temporary Clipping is used by the neurosurgeon to block proximal blood flow and decompress the aneurysm, in order to place permanent clip more safely. But, temporary clip cuts off blood supply to a region of the brain and causes transient ischemia. Therefore, the temporary clipping time is vital criteria and it depends on different factors, such as location, patient's condition, etc. There is not a certain time limitation and it is based on surgeons' experiences. An accurate and close-to-reality simulation can predict the effect of temporary clipping on the blood flow conditions during the surgery. We have used artificial neural network modeling besides the CFD modeling, to generate more reliable data for surgeons.

· Cerebrospinal fluid modeling

#### Cranfixer

Burr Hole Cover or Flap Fixer is a kind of clamp used after craniofacial surgery for fixing the removed skull flap of patients. Danawell team commercially named the produced Burr Hole Cover as Cranfixer. Cranfixer is a Burr Hole Cover that besides safely fixing patient's flap, enables passing a drain. This product can be easily used by attaching the upper or lower part of flap or skull hole with suture.

#### Features:

- Biocompatibility
- Non biodegradability
- · No need for accessories
- · Being reusable if the patient is in need of another surgery
- · Being affordable

#### Skull Surgery Training kit (SST kit)

The Skull Surgery Training (SST) kit simulates the drilling process in the craniofacial surgery to prepare the residents to function as a qualified practitioner of surgery. The mechanical properties of skull model are same as the real human skull and it gives real feeling of skull drilling. The amount of force is measured during drilling process and the comparison of forces can reveal the progress in the abilities to drill the human skull safely.

#### 3D Printed Presurgical Model

3D printed presurgical models provide the surgeon with an opportunity to predict a treatment plan for the patient before the surgery. Moreover, surgery plates can be formed on this model and minimize the duration of the surgery with high accuracy.

Features of the fabricated models at Danawell:

- High accuracy in design and fabrication (-100 µm)
- · Being stiff
- · Requiring short time for design and fabrication of affordable models
- · Extracting the geometry from patient's CT

#### **Customized Prosthesis**

Loosing parts of body directly affects the quality of life. Regarding craniofacial defects, they not only cause physical problems but also have negative effects on the appearance of the patient. Traumas, disease, and congenital disorders can be the cause of these physical disabilities. Using implants in the skull protects the brain. Implanting prosthesis in the orbit both keeps the eyes in its desired location and positively affects the appearance of patients.

The history of cranioplasty in craniofacial surgery dates back to about 5000 years ago, and Iran has been one of the leaders in this milieu. Lots of research have been conducted on finding a suitable material for covering the damaged areas. Owing to these investigations, the materials used, are safe materials.

Features of prosthesis produces at Danawell are as follows:

- Being geometrically compatible regarding anatomical properties of the patient
- · Can be easily placed in the desired damaged areas
- · Can be easily formed by surgeon during surgery
- · Using biocompatible and biodegradable materials
- Producing affordable prosthesis
- · Requiring reasonable time for production

#### Colexir

Collagen is a natural complex biopolymer which forms a scaffold to provide strength and structure in mammalians. It can be extracted from porcine, bovine, marine's skin, tendon, ligaments and other fibrous tissues. Collagen is extensively used in Medical surgeries, laboratory researches, food supplements, pharmaceuticals and cosmetics. 28 types of collagen have been recognized, Type, II, III, IV, V are the most common types. Type I collagen is the most abundant collagen of the human body and it has a fibrillar structure.

ColExir is a type I collagen, derived from both bovine and marine sources. Our products are manufactured in ISO 13485:2016 certified facilities and manufacturing processes meet quality Standards. It has established safety history.

## Kavoshgaran Salamat Bonyan





## Kavoshqaran Salamat Bonyan

As a knowledge-based spin-off company Kavoshgaran Salamat Bonyan has been started its activities in the Dental Biomaterials and equipments Incubator center of Tehran University of Medical Sciences. The company has managed to register its product as brand name AAFTIN GEL and received permission from ministry of health and then made contract with distributer company for distribution this product throughout our country.







#### Aftin Jel

Aaftin gel discovered during research project at Dep. of Bio dental materials at faculty of dentistry of Tehran University of Medical Sciences as best treatment for Recurrent Aphthous stomatitis (RAS) or Canker sore. It is in gel form and each applicator is good enough for at least 10 times treatment of aphthous ulcer.

#### **Navateb Pars**



### **Navateb Pars**

NovaTeb pars Co., was established in 2007 based on commercial identity. However, after some years of cessation, its activity was started in 2014 with a new combination of management committee with production identity, focusing on producing biomaterials.

Since the first year of development in 2014, all of the company products have been entered the testing phase under controlled condition of sterilization. Moreover, all of the essential tests including physicochemical properties, biocompatibility, and animal phase studies have been conducted.

## **Products:**

#### Bone+S

Synthetic Bone Grafting Material







# Also in this category, companies that will be presented in the future version of this catalog are:

- 1 Ertegha Salamat Morvarid Iranian
- 2 Danesh Afza Samin Mehr
- 3 Danesh Pajooh Teb Hanan Shimi

# **Health Technologies**

**Ordibehesht Pharmaceuticals** 

**Anapharmed** 

**Hayyan Zistfan** 

**Kimia Science Educational Institute (AVEED Group)** 

**Avisa Teb** 

**Parsian-Mehr Ventilation and Filtration** 

**International Danesh Afarinan Taban** 

Pooya pezeshki pishro

Divan pharmed azma

**Mahboub Bioresearch** 

**Zist Mayad Farmed** 

Sam Exir AnaRad

**Touba Teb Kowsar (TTK)** 

Vista Exir company

**Behnood DramanGostar Razi (BDR research)** 



## **Ordibehesht Pharmaceuticals**



## **Ordibehesht Pharmaceuticals**

Ordibehesht Pharmaceuticals has started its activity in the field of smart biomaterials in 2019. Our goal is to offer modern medical products to healthcare centers.







#### Thermoresponsive sealant

Open globe injuries are full-thickness injuries sustained to the eye wall (cornea or sclera), which cause immediate drops in intraocular pressure that may lead to retinal detachment and permanent vision loss if not treated rapidly after injury. The current standard of care for open globe injuries consists of suturing the margins closed, but the technique can be time-consuming, requires specialized training and equipment, and can lead to patient discomfort, abrasion, and infection from eye rubbing. Traumatic eye injuries require rapid treatment to prevent deterioration of vision. As an alternative to suturing or adhesives, we are developing a temperature-responsive synthetic hydrogel that acts as a temporary sealant.

## **Anapharmed**



## **Anapharmed**

Anapharmed is an innovative company in recombinant products. The company has established various kinds of:

- Recombinant peptides such as PTH (recombinant human parathyroid hormone), Gattex (glucagon-like peptide-2 analog), BNP (nesiritide)
- · Recombinant proteins such as Growth Hormone, IFNB-1B, GCSF

The mentioned above products are in pre-industrial scale and need investment for further proceed. Ongoing projects are design a kit based on FISH technique for chimerism analysis. Another works are in research and development section of company (Trastuzumab, Bevacizumab, Ramucirumab).



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Ana Pharmed, Pasteur Institute of Iran Research and Production Complex, 25th Kilometer of Tehran-Karaj Highway, Iran

## Hayyan Zistfan



## Hayyan Zistfan

Hayyan Zistfan is a research and development company that its mission is to produce some chemical and biological products.

## **Products:**

BCA Protein assay kit Bradford Protein assay kit Biuret Protein assay kit Lysozyme enzyme







#### Kimia Science Educational Institute

(AVEED Group)



## Kimia Science Educational Institute (AVEED Group)

Kimia Science Educational Institute (AVEED Group) has been stablished in order to transform and develop the country's medical education system by using digital technologies. Benefiting from the presence of national and international elites, specialists in health and information technology, we aim to help the development of the medical community's knowledge and skills by providing new educational methods. In this regard, the AVEED group seeks to engage universities, centers, and faculty members in enhancing the effectiveness of retraining courses.



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www.aveedme.com info@aveedme.com



Unit No. 1, Bimeh 3th St, Ekbatan, Azadi Sq., Tehran, Iran

#### Services and Activities:

Comprehensive informing of medical education courses:

- Management platforms for scientific-educational centers and faculty members
- Advanced Search

Providing modern and advanced E-Learning Holding in-person training in the field of health

Personalized training courses

Educational media

Comprehensive medical education application

Aveed educational social network

Communication with valid international institutions and universities and training at the international level

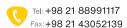


#### Avisa Teb



## Avisa Teb

With the slogan of innovation for future medicine and with the joint efforts of physicians, professors and elites of Tehran University of Medical Sciences, with the aim of research and development in remedial medicine, medical equipment, cellular and biological products and pharmaceuticals, Avisa Teb CO., Ltd has been established. Focusing on world-class science and technology, the center has made every effort to promote the country's scientific level and meet the needs of researchers, medical centers and research, and is committed to working with hospitals, medical centers, universities, research institutes, companies. And there are institutions active in this field.







1st floor, No 78, Italy St, Qods St, Enghelab St, Tehran, Iran

#### **Coated Stent**

Atherosclerosis is the most important cause of cardiovascular diseases. Today, the most commonly used treatment for this complication is drug eluting stents. Designing an effective coating for stents requires precise control of different surface and bulk properties of the coating.

#### Parsian-Mehr Ventilation and Filtration



## Parsian-Mehr Ventilation and Filtration

Commercial company Parsian-Mehr Ventilation and Filtration is formed to achieve new export markets for indoor air pollution control of all workplaces especially medical centers. The main motivation of the company is development of Portable air pollution control and low cost equipment to the whole region. improve the quality of people's health, achievement of all segments of society to health and clean workplace environment, helping people to have a happier, healthier life, and improving the health of the community. Our business practices are designed to achieve quality results.



Fax: +98 21 89772028





#### Portable Local Exhaust and Air filtration system

This device has an adjustable hood that easily focuses on the source of pollution and capture and purify contaminated air before entering the user's breathing zone. In this system, a wide range of chemical pollutants are removed from the air stream using proprietary adsorbents. This device is equipped with an air disinfection system and the air from the device is purified by the chemical and also purified by the presence of germs. It is easy to move around and does not interfere with regular activities.

#### Portable Clean air system

This device is used to purify the general air of various hospital spaces. Contaminated air in various areas can easily spread to all areas. Using three-step advanced filtration, the device is able to purify chemical, biological and particulate pollutants with high air efficiency and provide air-conditioned, pollution-free workplaces. On the inside of the purifier, UV disinfectants are used to destroy pathogenic microorganisms. This device prevents the accumulation of air pollution in closed hospital environments. It is easily portable and takes up little space. It has no annoying noise and is suitable for hospital environments.

#### Portable Isolation Hood

Isolation hood is a mobile device designed specifically for the use of hazardous substances and compounds. The system is designed to prevent the operator's exposure to hazardous agents. The upper part of the device consists of a chamber with a lid on top of it, where containers and dangerous contents are placed. This door is transparent and is easy to see when the operator closes the door. On either side of the hood, there are two small circulars opening in which the operator can easily slip his hand into the opening and work with hazardous materials. Contaminated air is drawn into the device through the hood compartment and creates a negative pressure in the upper compartment, allowing the contaminant to escape to the outside of the hood to zero.

#### Nest equipped with air purification system

One of the newest ways of preventing the transmission of pathogens from pets and lab animals is to use nests and cages with an advanced filtration system. These systems utilize specialized adsorbents in three stages to remove contaminants from animal and bird waste, as well as contaminants that are removed from the skin of animals and birds at bedtime and at rest. In these systems, whose inlet opening is designed inside the cage near the bottom of the cage, the polluted air inside the cage sucked into the device. In the interior of the machine, ultraviolet disinfection lamps are used to eliminate pathogenic microorganisms.

#### Portable Air filtration system for beauty salons

Portable Air filtration system for hairdressers can purify the air of salons without the need for additional ducting and costs. It has an adjustable hood that easily focuses on the source of contamination and sends and purifies it before entering the operator breathing system.

The device is designed to capture and purify contaminated air before entering the user's breathing zone. This device is equipped with an air disinfection system and the air from the device is purified by the chemical and also purified by the presence of germs. This machine is easy to move around and does not interfere with regular hairdressers' activities.

#### International Danesh Afarinan Taban



## **International Danesh Afarinan Taban**

Our company is active in training and holding specialized courses and providing training packages in the field of medical sciences.

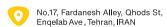
## **Products:**

#### **Training packages**

Training packages are provided both online and in physical form to enhance practical skills. Online packages are being edited for upload on the our site.







## Pooya pezeshki pishro



## Pooya pezeshki pishro

Pooya pezeshki pishro funded in 2019 to help patients with frequent headaches by decrease their headache frequency and severity. Headaches accounted as second order of disability induced disease worldwide and first order in our country.

## **Products:**

#### Migrana

Migrana is a headache relief headset which by using EMS/tense electrical signals improve the headaches. It is a very safe device suitable for patients with drug prohibition or drug resistance and during pregnancy and lactation.









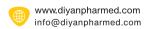
## Diyan pharmed azma



## Diyan pharmed azma

In response to the national demand of promotion of the science from theory to practice, the knowledge-based company (Diyan Pharmed Azma) was established with the efforts of a team of researchers of The Institute of Pharmaceutical Sciences (TIPS), Tehran University of Medical Sciences in 2019. The company's major program is to design, fabricate, develop, and commercialize the advanced technologies in the field of diagnostic kits, laboratory equipment, nanoparticles synthesis and applications, and medical devices to improve community healthcare.







#### One Step PSA Rapid Test Cassette

One Step PSA Qualitative Rapid Test (Serum/Plasma) is a qualitative rapid immunoassay procedure for qualitative detection of Prostate Specific Antigen in serum or plasma.

#### Summary and Explanation

Prostate specific antigen (PSA) is produced by prostate glandular and endothelial cells. It is a single chain glycoprotein with a molecular weight of approximate 34 kDa. PSA exists in three major forms circulating in the serum. These forms are free PSA, PSA bound to 1antichymotrypsin (PSA-ACT) and PSA complexed with 2-macroglobulin (PSA-MG). PSA has been detected in various tissues of the male urogenital system but only prostate glandular and endothelial cells secrete it. The PSA level in serum of healthy men is between 0.1 ng/mL and 2.6 ng/mL. It can be elevated in malignant conditions such as prostate cancer, and in benign condition such as benign prostatic hyperplasia and prostatitis. A PSA level of 3 to 10 ng/ml is considered to be in the "grayzone" and levels above 10 ng/ml are highly indicative of cancer. Patients with PSA values between 3-10 ng/ml should undergo further analysis of the prostate by biopsy. The prostate specific antigen test is the most valuable tool available for the diagnosis of early prostate cancer. Many studies have confirmed that the presence of PSA is the most useful and meaningful tumor marker known for prostate cancer and prostate infection of Benign Prostatic Hyperplasia (BPH). The PSA Qualitative Rapid Test (Serum/Plasma) utilizes a combination of colloidal gold conjugate and antiPSA antibodies to selectively detect total PSA in serum or plasma. The test has a cut-off value of 3 ng/ml and a reference value of 10 ng/ml.

#### Nanoparticles: synthesis and applications

#### · Gold Nanoparticles Properties

Gold nanoparticles have a broad spectrum of application areas including medicine, food industry, water purification, and biological applications. In particular, gold nanoparticles are applied to drug-delivery, photo-thermal therapy, imaging, sensing, catalysis, and even antimicrobials. The actual list of applications of gold nanoparticles is much longer due to their unique properties. Gold nanoparticles are known to be biocompatible but conventional reduction methods can leave some toxic chemical species on the surface, which may compromise their advantages.

#### · Gold Nanoparticles for Cancer Diagnosis

Gold nanoparticles have several advantages for cellular imaging compared to other agents. They scatter light intensely and they are much brighter than chemical fluorophores. They do not photobleach and they can be easily detected in as low as 10–16 M concentration.

#### · Nanofinishing: Fundamental principles

Gold nanoparticles have been widely studied due to their unique optical and biological properties. They could be used for highly sensitive diagnostic assays, thermal ablation, and radiotherapy enhancement, as well as for drug and gene delivery. They are mainly prepared via chemical reduction method using gold salts such as hydrogen tetrachloroaurate (HAuCl4) as precursor and citrate as reducing agent. Interaction of light at specific wavelength causes collective oscillation of electrons on the gold nanoparticle surface known as surface resonance (SPR) resulting in strong extinction of light (absorption and scattering). The light wavelength is dependent on the gold nanoparticle size and shape. Hence, colloidal gold has red (for particles < 100 nm) or dark yellowish color (for larger particles). The maximum absorption wavelength of gold nanospheres with 10 nm particle size is around 520 nm. This maximum absorption shows a red shift with an increase in particle size due to the electromagnetic retardation in larger particles.



#### Mahboub Bioresearch



## **Mahboub Bioresearch**

Mahboub bioresearch Company (MBR), located at the Health Technology Development Center of Tehran University of Medical Sciences, was established in 2018 by an experienced staff of postdoctoral and doctoral faculty members. The company's first goal is to produce high-quality, recombinant protein and laboratory kits for researchers in the fields of cell and molecular biology, biological sciences, immunology, and laboratory sciences. One of the most important features of the company is the preparation of recombinant proteins in the shortest possible time. The company is also ready to provide consulting services in the field of Molecular Biology and Biotechnology Research Projects with appropriate contracts.

 $The \, company \, has \, three \, units: \, production \, unit, \, research \, unit \, and \, business \, unit.$ 



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#### Annexin V-FITC/PI Apoptosis Detection Kit

The Ca2+-dependent binding of Annexin V to phosphatidylserine (PS) on the cell surfaces is a reliable marker for apoptosis that is widely used in flow cytometry-based apoptosis assays. Apoptosis Detection Kit is based on the observation that soon after initiating apoptosis, cells translocate the membrane phosphatidylserine (PS) from the inner face of the plasma membrane to the cell surface. The annexin A5 affinity assay typically uses a conjugate of annexin V/fluorescent label, in a suitable buffer (annexin V binding to PS is Ca2+ dependent), with the staining of cell nucleus with PI in living cells to distinguish from dead cells. Detection can be analyzed by flow cytometry or by fluorescence microscopy.

#### Cell Proliferation Kit (MTT)

The Cell Proliferation Kit (MTT) is a colorimetric assay for the nonradioactive quantification of cellular proliferation, viability, and cytotoxicity. Sample material is either adherent or suspension cells cultured in 96-well microplates.

Colorimetric assays analyze the number of viable cells by the cleavage of tetrazolium salts added to the culture medium.

#### **Recombinant Proteins**

1. VEGF121 human, Recombinant, expressed in E. coli, ≥90% (SDS-PAGE)

The gene VEGFA (vascular endothelial growth factor A) encodes a secreted mitogen that is found to participate in physiological and pathological angiogenesis. It serves as a growth factor for endothelial cells and functions in the formation of new blood vessels during embryonic development and adulthood. Recombinant human VEGF-A121 (rhVEGF-A121) produced in E. coli is a disulfide-linked homodimer containing two non-glycosylated polypeptide chains of 121 amino acids each.

#### Human IL-2, Recombinant, expressed in E. coli, ≥90% (SDS-PAGE)

IL-2 is a powerful immunoregulatory lymphokine produced by T cells in response to antigenic or mitogenic stimulation. IL-2/IL-2R signaling is required for T-cell proliferation and other fundamental functions that are essential for the immune response. IL-2 stimulates growth and differentiation of B cells, NK cells, lymphokine-activated killer cells, monocytes, macrophages and oligodendrocytes. Recombinant Human IL-2 is a 15.5 kDa protein, containing 134 amino acid residues including one intrachain disulfide bond.

FSTL1 protein resembles follistatin, an ACTV-binding protein. FSTL1 is an autoantigen associated with rheumatoid arthritis and it holds an FS section, a follistatin-like sequence having 10 conserved cysteine residues. rhFSTL1 has a molecular mass of 35 kDa analyzed by non-reducing SDS-PAGE and is obtained by Ni-NTA chromatography technique at MBR.

BMPs (Bone Morphogenetic Proteins) belong to the TGF- $\beta$  superfamily of structurally related signaling proteins. BMP-2 is a potent osteoinductive cytokine, capable of inducing bone and cartilage formation in association with osteoconductive carriers such as collagen and synthetic hydroxyapatite.

#### EGF human, Recombinant, expressed in E. coli, ≥90% (SDS-PAGE)

EGF is a potent growth factor that stimulates the proliferation of various epidermal and epithelial cells. Additionally, EGF has been shown to inhibit gastric secretion, and to be involved in wound healing. EGF signals through a receptor known as c-erbB, which is a class I tyrosine kinase receptor. This receptor also binds with TGF- $\alpha$  and VGF (vaccinia virus growth factor). Annexin V Human, Recombinant, expressed in E. coli,  $\geq 90\%$  (SDS-PAGE)

ANX-V is a member of the annexin family of calcium-dependent phospholipid binding proteins which are involved in membrane-related activity along exocytotic and endocytotic pathways. ANX-V is a phospholipase A2 and protein kinase C inhibitory protein with calcium channel properties and takes part in cellular signal transduction, inflammation, growth and differentiation. C) Buffers.

TAF

**PBS** 



#### Zist Mayad Farmed



## **Zist Mavad Farmed**

Zist Mavad Pharmed Company was established in 1396 using experienced and educated person. The company began its activities with Phosphate Buffered Saline (PBS) Tablet and has recognized as a Knowledge enterprise company in 1397.

Zist Mavad Pharmed Company, including the field of activities of this company, manufacturing of Phosphate Buffered Saline (PBS) Tablets production and packaging and distribution, export and import of pharmaceutical products, supplements and cosmetic products as well as the production of diagnostic kits, and also purchase and selling all medical and industrial items.







Unit 21, Floor 4th, No.1547, Kargar St, Tehran, Iran 1417993339

#### Phosphate Buffered Saline (PBS) Tablets

PBS (phosphate buffered saline) is a common buffer solution used in the laboratory. It is an isotonic and non-toxic buffer that is meant to mimic the osmolarity and ion concentrations of the human body. The easiest way to prepare PBS solution is to use buffered PBS tablets. It is an isotonic and non-toxic buffer that is meant to mimic the osmolarity and ion concentrations of the human body. PBS is used for immunoassays, for sample dilution, for protein purification, and as a wash buffer in cell cultures. PBS tablets are premeasured tablets for convenient preparation of 1X PBS solution at a pH of 7.3 – 7.5. PBS buffer contains 10 mM phosphate buffer, 137 mM sodium chloride, and 2.7 mM potassium chloride

#### Albumin kit

Albumin is the most abundant plasma protein in human. It accounts for about 60% of the total serum protein. Albumin plays important physiological roles, including maintenance of colloid osmotic pressure, binding of key substances such as long-chain fatty acids, bile acids, bilirubin, haematin, calcium and magnesium. It has antioxidant and anticoagulant effects, and also acts as a carrier for nutritional factors and drugs, as an effective plasma pH buffer.

Serum albumin is a reliable prognostic indicator for morbidity and mortality, liver disease, nephritic syndrome, malnutrition and protein-losing enteropathies. BCG Albumin Assay Kit is designed to measure albumin directly in biological samples without any pre-treatment. The improved method utilizes bromcresol green that forms a colored complex specifically with albumin. The intensity of the color, measured at 620nm, is directly proportional to the albumin concentration in the sample. The optimized formulation substantially reduces interference by substances in the raw samples.

#### Glucose-6-phosphate dehydrogenase kit (G6PD)

Glucose-6-phosphate dehydrogenase (G6PD) deficiency affects over 200 million people around the world, Glucose-6-phosphate dehydrogenase (G6PD) is the first enzyme in the pentose phosphate pathway in red blood cells. The main physiologic role of this pathway is to generate the reduced nicotinamide adenine dinucleotide phosphate (NADPH) necessary for protection of the cells against oxidative stress. NADPH maintains glutathione in the reduced state when erythrocytes are subjected to an oxidative stress. Low activities of G6PD render red blood cells susceptible to hemolysis under certain conditions such as ingestion of fava beans, certain drugs, and severe infections. This G6PD quantitative kit was designed based on the catalytic activity of the enzyme in the conversion of glucose-6-phosphate to 6-phospho-gluconate, which occurs simultaneously with the reduction of NADPH.

#### lactase drops for babies

A poor milk digestion can lead to a series of reactions in the newborn that generate discomfort, followed by a prolonged and intense cry. A very common problem known as transient lactase deficiency is the main cause of this situation that occurs during first months of life. Lactase drops for babies is a food supplement of lactase enzyme that helps to break down the lactose (hydrolysis) into two simple sugars, glucose and galactose, simplifying digestion process.

#### Acetyl I-carnitine and alpha lipoic acid capsules

Acetyl-L-carnitine is a dietary supplement used to improve memory and may improve depression. Alpha lipoic acid, an antioxidant, is a vitamin-like substance that helps to make energy in the body. This supplement increases fat metabolism and builds muscle tissue by increasing metabolism. Alpha lipoic acid and acetyl L-carnitine are also known as mitochondrial antioxidants and provide anti-aging materials. It is effective in protecting fatty tissues and membranes.

#### Green Fer Detoxx

In a perfectly healthy environment, the body can probably take care of everything, but since there are industrial compounds, pollutants, and other chemicals in the environment and food, the body can barely handle it. Get rid of all these toxins. Today, there are more than 5 new synthetic chemicals in the environment that the immune system has never encountered before, yet few people are eager to start a cleansing diet. But with poisonous supplements you can do this easily and daily. In fact, the lower the absorption of toxins in your body, the more likely your body is to maintain good health.

There are several types of detoxification supplements available. Those that support the body's detoxifying organs, including the liver, kidney, colon, lymphatic system, lungs and skin. Those that improve cell detoxification, and supplements that help eliminate toxins from intracellular fluids and blood. With millions of cells in the human body, it is clear that cellular detoxification is the essential detoxification the body needs.

There are various compounds in natural herbs that aid in the natural detoxification of the body, including glutathione, chlorophyll, antioxidant compounds such as silymarin and vitamin C. Nacetylcysteine, fiber, sulfarafan and Specific types of proteins are indicated in the supplement produced in the Sam Exir AnaRad, the body's detoxification with these types of natural plant compounds.

#### Green Fer Immune Booster

The immune system is a part of the body that is responsible for identifying its own cells and molecules from the alien and destroying or destroying them. But sometimes the immune system fails: microbes enter the body and cause illness.

There is evidence that various micronutrient deficiencies, such as zinc, selenium, iron, copper, folic acid, and vitamins A, B6, C and E, alter the immune response in animals, and by suppressing the immune system, they are susceptible to infections. Makes it vulnerable. The weakening of the immune system begins at the age of 30 due to a decrease in the number and activity of T cells. These cells help fight white blood cells in addition to fighting viruses and tumor cells to ward off attacks by bacteria and other harmful agents. But interestingly, the weakness of the immune system is compensable and in many cases its diseases can be treated with moderate or high intakes of some vitamins and minerals.

Fermented Immune Enhancement Supplement of Sam Exir AnaRad aims to boost the immune system by providing the body with the necessary nutrients.

#### Sam Exir AnaRad



#### Sam Exir AnaRad

SamExir AnaRad Company has started its activities in the production of natural/ organic fermented supplements in 1398 with the aim of maximizing the absorption of minerals and organic matter to enhance natural immunity and detoxification, prevention or reduction in various abnormalities such as cardiovascular disease, hypertension, obesity and etc.

Dietary supplements are products that contain vitamins, minerals, amino acids, herbal and natural products that are non-injectable and orally administered. Today, nutritional or medicinal supplement use is on the rise in most social groups. In this regard, a variety of supplements are available in the consumer market. One of the developing supplements is the fermented supplements targeted by Sam Exir Anarad. Fermented supplement technology is the processing of natural and herbal ingredients in the presence of probiotics to enhance the absorption and nutritional value of rapidly replacing past-generation supplements.



## Touba Teb Kowsar (TTK)



## Touba Teb Kowsar (TTK)

Touba Teb Kowsar (TTK) is a medical device development company that intends to design, patent, and market medical devices related to cardiovascular niche markets. TTK is a Private Joint Stock Company that obtained certificate of "Danesh Bonyan" from Iran National Innovation Fund Organization for one of the products. Two devices have already been designed with the participation of Polymer and Mechanical engineers as well as cardiologists. TTK is in the developing step and has five other devices in the next phase to design and manufacture.



toubatebkowsar@gmail.com



Health Technology Incubator, App. 21, 4th Floor, Research Center Building, No. 1574, North Kargar, Tehran, Iran 1417993339

#### **Diagnostic Catheter for Angiography**

The best minimally invasive procedure to access the coronary circulation is coronary catheterization by using a catheter. The angiographic catheter manufactured by TTK is a plastic tube with thin wall technology that allows for a larger inner lumen diameter, facilitating easy injections and higher flow rates. TTK's catheter are made in different French sizes having braiding construction that allows torque control and enhanced pushability without compromising kink resistance. This product has the advantage of radiopaque tip that improves visibility to help reduce the risk of vascular damage upon entering tortuous or fragile vessels.



#### Vista Exir



## Vista Exir

Vista Exir Technology Development Co., Ltd has begun to work with the efforts of the group of professors and students of Tehran University of Medical Sciences (TUMS). The aim of this company is to provide professional services and support needs of researchers, industrial and research centers. Vista Exir is interested in cooperating with universities, research centers, companies and active institutions in nanotechnology.







#### Metallic salt

Chloroauric acid (HAuCl4)

#### Gold nanoparticles (Au NPs)

Gold nanoparticles (Au NPs) possess useful attributes such as size- and shape-related optoelectronic properties, large surface-to-volume ratio, excellent biocompatibility, and low toxicity. These properties make Au NPs an important tool in bionanotechnology.

Recently, unique properties of Au NPs have been researched and utilized in high technology applications such as organic photovoltaics, sensory probes, therapeutic agents, drug delivery in biological and medical applications, electronic conductors and catalysis. The optical and electronic properties of gold nanoparticles are tunable by changing the size, shape, surface chemistry, or aggregation state.

#### Silver nanoparticles (Aq NPs)

Silver nanoparticles (Ag NPS) were found to exhibit antibacterial effects at low concentrations. Their antibacterial properties were related to the total surface area of Ag NPs. Smaller particles with a larger surface to volume ratio provided a more efficient means for antibacterial activity. Moreover, Silver nanoparticles have unique optical, electrical, and thermal properties and are being incorporated into products that range from photovoltaic to biological and chemical sensors. Additional applications include molecular diagnostics and photonic devices, which take advantage of the novel optical properties of these nanomaterials

#### Zinc oxide nanoparticles (ZnO NPs)

ZnO-NPs exhibit attractive antibacterial properties due to increased specific surface area as the reduced particle size leading to enhanced particle surface reactivity. ZnO NPs is a bio-safe material that possesses photo-oxidizing and photocatalysis impacts on chemical and biological species.

#### selenium nanoparticles (SeNPs)

Se NP, a kind of elemental Se particle at a nano-size scale with a bright red color, has aroused worldwide attention due to its unique properties and excellent biological activities. It not only scavenges the free radicals in vitro but also improves growth, serum oxidant status and Se concentration in vivo. Se NPs exhibit attractive anticancer activity and reduced toxicity concerns compared to different Se species. Se NPs have been used in many disease conditions including cancer, diabetes, inflammatory disorders, liver fibrosis, and drug induced toxicities.

#### Polymeric nanoparticles

Polymeric nanoparticles are solid particles or particulate dispersions with size in the range of 10–1000 nm. Due to the very small size, the surface area is very large so the percentage of atoms or molecules on the surface is significantly increased, which is expected to have extensive applications in various fields such as drug delivery systems, biosensors, catalysts, nanocomposites, agriculture and environment.

#### Nanofihers

Nanofibers exhibit special properties mainly due to extremely high surface to weight ratio compared to conventional nonwovens. Low density, large surface area to mass, high pore volume, and tight pore size make the nanofiber appropriate for a wide range of applications.

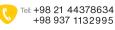
# Behnood DramanGostar Razi (BDR research)



## Behnood DramanGostar Razi (BDR research)

This company is a knowledge-based company that try to incorporate different scope of sciences into practice in field of pharmaceutical industry and management. In recent years Contract Research Organizations (CRO) are plying an important role in research and development for pharmaceutical companies that they outsourced some of their projects.

In fact, we can support researches that are included from A to Z like preparing feasibility study, business plan, plan of action, economic analysis, basket of product selection, economic evaluation study (e.g. cost-effectiveness analysis), formulation development, bioequivalence studies and CTD preparation.



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1 Hayan zist fan



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