

Patent Annotations:

The patents annotated in this section have been selected by the authors of this issue as the most important patents of relevance to their field.

MOLECULAR TARGETS FOR PROMOTING WOUND HEALING IN DIABETES

1. **Lactoferrin compositions and methods of wound treatment**, *Engelmayer, J., Varadhachary, A.: US20040142037 (2004).*

Commentary:

The present invention describes the composition of lactoferrin. The method of administering these compounds in wound treatment is also discussed.

2. **Thymosin beta 4 promotes wound repair**, *Kleinman, H.K., Goldstein, A.L.G., Malinda, K., Sosne, G.: EP1591128 (2005).*

Commentary:

This invention discloses the role of thymosin beta 4 in wound repairing.

3. **Method to promote wound healing**, *Witten, M.L.: WO06047625 (2006).*

Commentary:

The present invention describes the methods to promote wound healing in irradiated animals by substance P and its active analogs. The wounds that can be treated by substance P and its analogs include surgical wounds, weapon wounds, disease-caused wounds, bed sores and diabetic ulcers.

4. **Use of substance P for mobilization of mesenchymal stem cells or proliferation of mesenchymal stem cells and for wound healing or facilitating wound healing**, *Son, Y.S., Hong, H.S., Kim, J.C.: US20060127373 (2006).*

Commentary:

This invention relates to the formation of a medicament by substance P for the proliferation of mesenchymal stem cells (MSCs). This medicament can be used for facilitating wound healing.

5. **Regulation of angiogenesis with zinc finger proteins**, *Rebar, E., Jamieson, A., Liu, Q., Liu, P., Wolffe, A., Eisenberg, S.P., Jarvis, E.: US20050267062 (2005).*

Commentary:

The present invention provides the methods and compositions for the regulation of angiogenesis. Pharmaceutical composition of these compounds and zinc finger proteins for the treatment of ischemia and wound healing is also discussed.

6. **Recombinant fibroblast growth factor analogs**, *Fiddes, J.C., Abraham, J.A., Protter, A.: US20050227329 (2005).*

Commentary:

The invention describes recombinant fibroblast growth factor analogs and their use in wound healing and tissue repair.

7. **Human therapeutic cells secreting nerve growth factor**, *Tornoe, J., Kusk, P., Wahlberg, L.: WO05068498 (2005).*

Commentary:

The present invention discloses encapsulated human cell lines to overexpress bioactive nerve growth factor NGF. These NGF can be used for the treatment of Alzheimer's disease, peripheral neuropathy and other neurological disorders.

8. **HOXD3 compositions as methods for improved wound healing**, *Boudreau, N., Young, D.M., Myers, C.: WO02102982 (2002).*

Commentary:

The present invention describes the methods and compositions for improving and controlling wound healing in diabetic subjects that have impaired healing capabilities by the use of HOXD3.

9. **HOXD3, HOXA3, and HOXB3 compositions and methods for improved wound healing**, *Boudreau, N., Young, D.M., Myers, C.: WO05062767 (2005).*

Commentary:

This invention describes a wound care device comprising of HOXD3, HOXA3 and HOXB3 for improving and controlling wound healing in diabetic subjects.

INSULIN DELIVERY SYSTEMS FOR CONTROLLING DIABETES

1. **Drug-oligomer conjugates with polyethylene glycol components**, *Ekwuribe, N.N., Ramaswamy, M., Rajagopalan, J.: US20067030084 (2006).*

Commentary:

The present invention describes the methods and compositions of drug-oligomer conjugates with polyethylene glycol components. A conjugate of insulin, PEG and oleic acid is also discussed.

2. **Powdery composition for nasal administration**, *Dohi, M., Nishibe, Y., Makino, Y., Fujii, T.: US20056881423 (2005).*

Commentary:

The invention discloses the powdery composition for nasal administration from the nasal cavity. The increased

maximum blood concentration of the compounds is also discussed.

3. **Glucose responsive insulin secreting beta-cell lines and method for producing same**, *Laurance, M.E., Knaack, D., Fiore, D.M., Hegre, O.D.*: US5534404 (1996).

Commentary:

This invention highlights the methods by which insulin secreting beta cells secrete an increased amount of insulin in response to different glucose levels.

4. **Treatment of diabetes with synthetic beta cells**, *Alam, T., Hullett, D.A., Sollinger, H.W.*: US20056933133 (2005).

Commentary:

The present invention discloses the treatment of diabetes with synthetic beta cells. Methods for obtaining glucose-regulated expression of active insulin in the cells of mammals are also discussed.

5. **Neurogenin3 and production of pancreatic islet cells**, *German, M.S.*: WO05018331 (2005).

Commentary:

This invention features the production of pancreatic islet cells to facilitate insulin delivery by the use of islet transcription factor hNgn3.

DEVELOPMENT OF PROLACTIN RECEPTOR ANTAGONISTS: SAME GOAL, DIFFERENT WAYS

1. **Growth hormone antagonists**, *Kopchick, J.J., Chen, W.Y.*: US00418561 (1989).

Commentary:

The invention relates to antagonizing effect of human GHs or bovine. The use of these growth hormones for the treatment of diabetic retinopathy, glomerulosclerosis and for lowering cholesterol levels is also discussed.

2. **Methods and compositions for the treatment of prolactin-receptor related disorders**, *Clark, R.G.*: WO05058232 (2004).

Commentary:

The present invention discloses the pharmaceutical composition of growth hormone-based prolactin receptor antagonists. The role of these prolactin receptor antagonists for the treatment and prevention of breast or prostate cancer is also highlighted.

3. **Mammal prolactin variants**, *Goffin, V., Bernichtein, S., Kelly, P.A.*: WO03057729 (2003).

Commentary:

The present invention relates to mammal prolactin variants having a set of mutations within 14 N-terminal amino acid. These variants are useful as antagonists in mammals as prolactin receptor (PRLR).

4. **Antagonists for human prolactin**, *Brooks, C.L., Peterson, F.C.*: US20036995244 (2003).

Commentary:

The present invention describes human prolactin antagonists and their use in the treatment of cancer.

5. **Prolactin antagonists and uses thereof**, *Walker, A.M.*: US6890738 (1998).

Commentary:

This invention describes recombinant nucleotide sequences encoding mutated prolactin. The use of aspartate mutant as an effective antagonist is also discussed.

6. **Use of prolactin receptor antagonists in combination with an agent that inactivates the HER2/neu signaling pathway**, *Chen, W.Y., Scotti, M.L.*: US20050271626 (2005).

Commentary:

The present invention deals with the compositions and methods of prolactin receptor antagonists for inhibiting cell proliferation with an agent that inactivates HER2/neu signaling pathway.

7. **Bi-functional cancer treatments agents**, *Chen, W.Y., Wagner, T.E.*: US20020068043 (2002).

Commentary:

This invention relates to human prolactin antagonist-interleukin 2 (hPRLA-IL-2) fusion proteins for the treatment of breast or prostate cancer.

C75, A FATTY ACID SYNTHASE (FAS) INHIBITOR

1. **Inhibition of fatty acid synthase as a means to reduce adipocyte mass**, *Kuhada, F.P.*: EP0869784B1 (2005).

Commentary:

The invention discloses the means for reducing adipocyte mass by a cerulenin, which is a non-competitive inhibitor of fatty acid synthase (FAS). The reduction of adipocyte mass by FAS that can reduce diabetic complications including arterial disease, blindness and cataracts is also discussed.

2. **A method for inhibiting cancer development by fatty acid synthase inhibitors**, *Kuhajda, E., Jaffee, E., Townsend, E.*: EP1565180A2 (2005).

Commentary:

The present invention describes the methods and compositions of fatty acid synthase (FAS) inhibitors for the prevention and inhibition of invasive cancer from pre-malignant (non-invasive) lesions.

3. **Systems and methods for treating human inflammatory and proliferative diseases, with a combination of fatty acid metabolism inhibitors and glycolytic inhibitors and/or UCP and/or FAS antibodies**, *Newell, K.R.M.*: WO05107801A2 (2005).

Commentary:

The present invention discloses the systems and methods for the treatment of inflammation, proliferative diseases and wounds by using a combination of fatty acid metabolism inhibitors and glycolytic inhibitors.

MELATONIN AS ANTIOXIDANT UNDER PATHOLOGICAL PROCESSES

1. **Composition for improving cognition and melatonin**, *Moshe, L.: MX5011590A (2006).*

Commentary:

The present invention describes the methods for the treatment of insomnia patients by a pharmacologically active compound comprising of melatonin, melatonergic agents, melatonic agonists and antagonist, nicotine and nicotine receptor agonists.

2. **Methods of treatment utilizing certain melatonin derivatives**, *Zemlan, F.P.: WO06105455A2 (2006).*

Commentary:

The present invention describes the method for the treatment of anxiety disorders, intracranial injury, spinal cord injury, neurodegenerative diseases, sclerosis, migraine, fibromyalgia and cerebrovascular disease by using melatonin derivatives.

3. **Novel imidazopyrodine derivatives, method for the preparation thereof and pharmaceutical compositions constraining said derivatives**, *Guillaumet, G., Berteina-Raboin, S., El Kazzouli, S., Delagrang, P., Caignard, D.-H.: WO06027474A3 (2006).*

Commentary:

The present invention discloses the use of novel imidazo-pyridinyl-amides for the treatment of disorders of melatonergic system including sleep disorder's depression, schizophrenia, anxiety, Alzheimer's disease, cancer and cardiovascular disease.

4. **Combined use of methylphenidate and melatonin treating attention-deficit hyperactive disorder**, *Kruisinga, R., Johannes, H.: US20060167050A1 (2006).*

Commentary:

The invention describes the use of methylphenidate and melatonin and its analog for the treatment of attention deficit hyperactive disorder (ADHD).

STIMULI-INDUCED PULSATILE OR TRIGGERED RELEASE DELIVERY SYSTEMS FOR BIOACTIVE COMPOUNDS

1. **Temperature controlled solute delivery system**, *Fisher, J.P.: US20046733788 (2004).*

Commentary:

The present invention describes temperature controlled solute delivery system in a mammalian body.

2. **Degradable cross-linking agents and cross-linked network polymers formed therewith**, *Kiser, P.F., Thomas, A.A.: US20030078339A1 (2003).*

Commentary:

This invention describes degradable cross-linking agents and cross-linked network polymers, which degrade under aqueous conditions.

3. **Temperature modulation of transdermal drug delivery**, *Mittur, A.: US20060135911A1 (2006).*

Commentary:

This invention discusses the temperature modulation of transdermal drug delivery administration for atleast one drug administered at a therapeutically effective rate.

4. **Stent having active release reservoirs**, *Santini, J.T., Hutchinson, C.E.: US20060217798A1 (2006).*

Commentary:

The invention provides devices for the controlled release of one or more drugs with the stent having active release reservoirs.

5. **Implantable, tissue conforming drug delivery device**, *Santini, J.T., Cima, M.J., Sheppard, N.F., Herman, S.J.: US20060178655A1 (2006).*

Commentary:

The invention discloses implantable tissue conforming drug delivery device in a patient. The different embodiment of this device is also discussed.

6. **Metallic structures incorporating bioactive materials and methods for creating the same**, *Gertner, M.E., Schlesinger, M.: US20060121180 (2006).*

Commentary:

The invention is directed toward the discussion of the metallic structures incorporating bioactive materials and the methods assisting in their formation.

7. **Controlled release device and method using electrothermal ablation**, *Uhland, S.A., Polito, B.F., Maloney, J.M., Sheppard, N.F., Herman, S.J., Yomtov, B.Y.: US20060100608A1 (2006).*

Commentary:

The invention discusses the controlled release by using electro thermal ablation.

8. **Fabrication methods and structures for micro-reservoir devices**, *Maloney, J.M., Sbiaa, Z., Santini, J.T., Sheppard, N.F., Uhland, S.A.: US20060105275A1 (2006).*

Commentary:

The invention deals with the structures for micro-reservoir devices and their methods of fabrication.

9. **Magnetic nanoparticles for selective therapy**, *Prasad, P.N., Bergey, E.J., Liebow, C., Levy, L.: US20036514481B1 (2003).*

Commentary:

This invention provides magnetic nanoparticles for selective therapy and their diagnostic use. It also describes a method for fabrication of nanolitics that can target and lyse specific cells such as cancer cells.