PHARMAPEDIA

PSGCP *E-News Letter*

VOL 1 I ISSUE 1 I JUN-SEP 2016

In this issue

Novel polymer as Second skin

Scientists at MIT, Massachusetts General Hospital, Living Proof, and Olivo Labs have developed a new material that can temporarily protect and tighten skin, and smooth wrinkles. It could also be used to deliver drugs to help treat skin conditions such as eczema and other types of dermatitis.

The material, a silicone-based polymer that could be applied on the skin as a thin, imperceptible coating, mimics the mechanical and elastic properties of healthy, youthful skin. In tests with human subjects, the researchers found that the material was able to reshape "eye bags" under the lower eyelids and also enhance skin hydration. This type of "second skin" could also be adapted to provide long-lasting ultraviolet protection, the researchers say.

Ref:http://news.mit.edu/2016/polymer-temporarily-tightens-skin-drug-delivery-0509

No more Insulin injection?

In patients suffering from Type 1 diabetes, the immune system attacks the pancreas, eventually leaving patients without the ability to naturally control blood sugar. A better diabetes treatment, many researchers believe, would be to replace patients' destroyed pancreatic islet cells with healthy cells that could take over glucose monitoring and insulin release. The patient immune system attacks the transplanted cells, requiring patients to take immunosuppressant drugs for the rest of their lives.

Now, a new advancement from MIT, the researchers has designed a material (Triazole-thiomorpholine dioxide (TMTD)) that can be used to encapsulate human islet cells before transplanting them. In tests on mice, they showed that these encapsulated human cells could cure diabetes for up to six months, without provoking an immune response.

Ref: http://news.mit.edu/2016/pancreatic-cells-diabetes-treatment-insulin-injections-0125

Can we print Tablets?

The answer is Yes. Researchers are much more successful in 3D printing pills using Stereolithography (SLA) technology. The SLA printer creates solid objects by using a laser beam to photopolymerise monomers. 3D printing makes major impacts on the medical industry.

3D printed pills are becoming a growing trend, many researchers being inspired from the FDA approval and subsequent recent commercial availability of 3D printed SPRITAM pills for epilepsy.

Ref: https://3dprint.com/130231/3d-printing-pills-sla-tech/

Second generation HPMC capsules:

The plant-based material, hydroxypropyl methylcellulose (HPMC),was developed as an alternative to gelatin for two-piece hard shell capsules. The first generation capsule form, however, required the use of secondary gelling agents, which resulted in variability in both disintegration and product dissolution. In the thermo-gelation process for second-generation HPMC capsules, heated stainless- steel pins are dipped into a solution of HPMC to form capsules without use of gelling agents. second-generation HPMC capsules offer disintegration/ product dissolution profiles that have been shown to provide equivalent *in-vivo* performance to gelatin capsules for drug molecules.

Ref:https://www.scribd.com/doc/315420566/Pharmaceutical-Technology-eBook-Solid-Dosage-Drug-Development-and-Manufacturing

The Beautiful old (Photo)

Preparation of pills in 19th century

Insulin vial in 1920's

Dosage form Update

Evolocumab (REPATHA) was previously available as 140mg q2w injection and now as pushtronex system which is monthly single dose administration of 420mg. Used to eliminate LDL from body.

Dapsone was previously marketed as 5% aczone gel which was BD dose. Now 7.5% aczone gel is been introduced by FDA as OD dose.

Quiz

1. I have a head and tail. I connect two enemies, one loves my head another loves my tail. Who am I ?

2. I am costly and inflammable but you like my approach. I am invisible in my house but when you bring me out I become visible. Who am I?

3. I brought revolution in biotechnology, most of the targeted drugs contains my acronym in suffix. Who am I ?

4. I bear oxygen carrying capacity inside you and when I am outside I can carry drug within you. Who am I ?

5. I am an instrument performing endothermic phase transition. Who am I ?

ANSWERS

1. Surfactant
2. Aerosol
3. Monoclonal antibody
4. Erythrocytes
5. Freeze dryer

New technology to prevent accidental abuse:

Egalet's proprietary Guardian Technology is a polymer matrix tablet technology that makes the tablets that are extremely hard, very difficult to chew, resistant to particle size reduction, and inhibit/block attempts at chemical extraction of the active pharmaceutical ingredient. The focus of the development is to reduce risk of accidental misuse and abuse of morphine sulphate (schedule II drug)

Ref:http://egalet.com/rd/technology-overview/

PUBLISHER:
Department of Pharmaceutics
PSG College of Pharmacy
Peelamedu, Coimbatore – 641004
Phone: 0422- 2570170 Extn: 5841
Website: www.psgpharma.ac.in
E-mail:psgcp.ceutics@gmail.com