PHARMAPEDIA

PSGCP E-News Letter

VOL 5 ISSUE 14 OCT 2020 - JAN 2021

A RELAXIN BASED NANOTHERAPY FOR LIVER FIBROSIS:

Human Relaxin 2 (RLX) is a naturally occurring peptide hormone which is used as a therapeutic agent. RLX acts through its G protein-coupled receptor and promotes tissue remodelling and causes anti-fibrotic effect. Research is carried out using fibrosis induced rodent model in which the condition is reversed due to the inhibition of collagen production.

Human Relaxin 2 has a short half-life with intravenous dosing, so that it leads to the discovery of small molecule Relaxin family peptide receptor 1 (RXFP1) agonist compound, Adenovirus-mediated RLX delivery and RLX conjugated to PEGylated super paramagnetic iron oxide nanoparticles. These approaches were shown to promote anti fibrotic effects. Plasmid DNA encoding RLX (pRLX) administration shows potent immunomodulatory effect, resulting in the expansion of hepatic restorative macrophages and reduction in fibrosis.
Ref:https://www.nature.com/articles/s41565-020-00832-w

COVID 19 VACCINE DEVELOPMENT USING PLANT TECHNOLOGIES

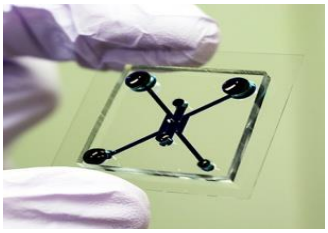
Researchers from Guangxi University and Huazhong Agricultural University used a 3D homology model of genome sequence of SARS-COV-2 to screen medicinal plant with potential antiviral phytochemicals. This led them to 9 specific plant molecules that may be used to develop drugs against COVID-19. Experts are striving towards developing plant derived vaccine which can be produced with less cost in high amounts.

https://www.sciencedirect.com/science/article/pii/S2095177920301271#!

Medicago, a biopharmaceutical company based in Canada, have successfully developed a Virus-Like Particle (VLP) of the Coronavirus using proprietary plant-based technology from Queensland University of Technology. Instead of using egg-based methods to develop vaccines, their technology inserts a genetic sequence into *Agrobacterium*, a common soil bacterium that is taken up by plants. Then the plant produces the protein that can serve as a vaccine. British American Tobacco, through its biotech subsidiary in the US, Kentucky Bio-Processing (KBP), is developing a potential vaccine for COVID-19 and is currently in pre-clinical testing.
http://www.isaaa.org/kc/cropbiotechupdate/article/default.asp?ID=18103

Nano engineers at the University of California San Diego are exploring using a plant virus in developing a COVID-19 vaccine that can be shipped anywhere around the globe without the need for refrigeration.
http://www.isaaa.org/kc/cropbiotechupdate/article/default.asp?ID=18090
Ref: https://www.isaaa.org/resources/publications/pocketk/58/default.asp

A TUMOUR CHIP FOR DRUG SCREENING



Due to the low success rate of cancer drugs in clinical trial, a microfluidic tumour-on-a-chip platform is developed which allows high performance preclinical drug screening.

A tumour micro environment is characterized by a leaky vasculature, extracellular matrix, cancer associated fibroblast which interacts with the cancer cells and remodel the matrix forms a complex environment that affects the drug delivery into cancer cells. To mimic the above circumstance, a tumour chip is designed that contains all the elements same as that of tumour micro environment.

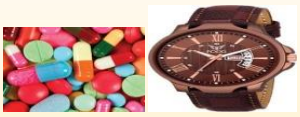
The cancer and stromal cells of chip is covered by endothelial layer. Cytokines present in the cancer cells makes the endothelial layer leaky that causes an increase in cancer cell proliferation. In the treatment of breast cancer, the presence of an endothelial layer decreases the toxic effect of doxorubicin which delays the drug response implying that stromal cells can reduce the cancer cell apoptosis and/or prevent the drug accumulation

Ref: https://www.nature.com/articles/s41578-020-00258-9

CONNECT THE PICTURES

1. Co-processed excipient

2. 3500(A) ADR reporting form



3. FDA headquarters

4. Approved drug products with therapeutic equivalence evaluation

PHARMA FACTS

1. Freeze drying process was invented by Jacques Arsened'Arsonval in 1906.

2. Mylapet, a drug used to treat lipodystrophy remains the most expensive drug in US in the year 2020.

THE BEAUTIFUL OLD

19th century Japanese self-administering enema syringe with a piston and reservoir.

MISSING LETTERS

1. Chemical name of the Epsom salt

M_ _ _e_ i_ _ _u_ _h_ _e

2. Polymer used as granulating agent

_ o_ _ _ d o_

3. Controversial cosmetic ingredient

P _ _a _a_ e _

4. Father of American pharmacy

_ i_ l _ a _ P _ o _ t_ r

CORNER OF APPRECIATION:

Congratulating the participants of previous newsletter puzzles

1. Sivaranjani D, M.Pharm
2. Ilakkiya VA, M.Pharm
3. RajakumariV, M.Pharm

ANSWERS FOR THE PREVIOUS E-NEWSLETTER PUZZLE:

1.PYCNOMETER 2.SPANS 3.GRANULES 4.JENA GLASS 5.LOZENGES 6.CYCLODEXTRIN 7.MAPLE 8.NITRILE 9.TALC 10.VINYL 11.ROTOSORT12.SULPHUR 13.VISCOSITY 14.BLISTERING 15.MICA

Send your correct answers to psgcp.ceutics@gmail.com.

The first three participants with correct answers will be acknowledged in the next issue.

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