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PHARMAPEDIA

PSGCP E-News Letter

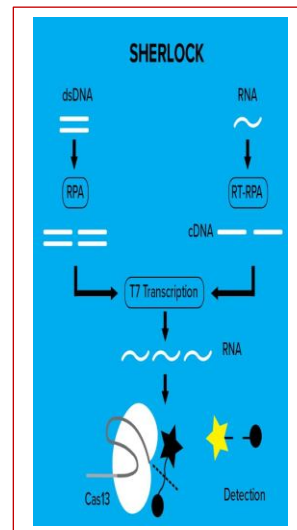
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FDA Authorizes First-Ever Crispr Application for Coronavirus Test

The USFDA has granted its first emergency-use approval for a new coronavirus test that takes advantage of the gene-editing technology CRISPR developed by Cambridge, Massachusetts-based Sherlock Biosciences. The first step for Sherlock's test is taking a patient sample from the nose or throat or lungs and making many copies of the genetic material while keeping them at a certain temperature. Then a Crispr molecule, a protein complex known as Cas13, is added to those sample copies. If any RNA sequences from the SARS-CoV-2 coronavirus are present in the sample, it latches on and starts cutting them off into smaller pieces, some of which are tagged with a fluorescent marker. Once detached, the sample "glows" indicating a positive finding of COVID-19. The whole process takes about one hour.

Ref1: <https://www.forbes.com/sites/katiejennings/2020/05/07/fda-authorizes-first-ever-crispr-application-for-covid-19-coronavirus-test/#3b935dca1708>

Ref 2: <http://www.addgene.org/crispr/>



Face mask that kills coronavirus being developed

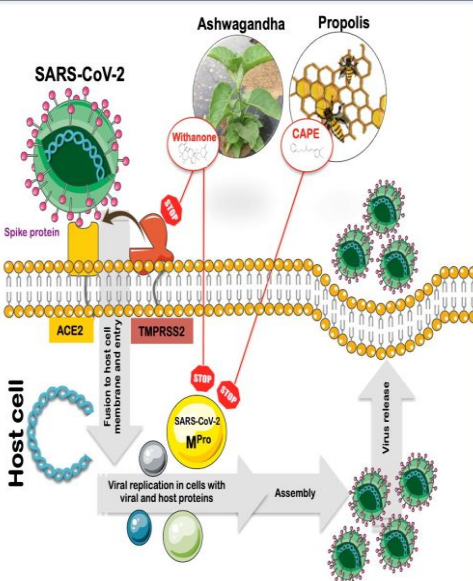
A team of researchers at University of Kentucky are working on an anti-viral face mask that could kill coronavirus upon making contact and they have received a grant from the National Science Foundation (NSF) to make these masks a reality. The novel coronavirus has a crownlike, or coronal, appearance, as it is covered in club-shaped "s-protein" spikes that allow the virus to enter host cells once in the body. The mask will be made from flat sheet materials with a spongy structure that will include charged domain and proteolytic enzymes that will attach to the protein spikes of the coronavirus and separate them, killing the virus.

Ref: <https://uknow.uky.edu/research/uk-gets-nsf-funding-develop-face-mask-can-deactivate-covid-19>

Ashwagandha and propolis may hold efficient anti-COVID-19 drugs

Natural compounds from Ashwagandha and Propolis could be potential drug candidates against Covid-19, according to a collaborative research study of DAILAB at IIT Delhi and DAILAB at AIST, Japan. The researchers targeted the main SARS-CoV-2's enzyme for splitting proteins, known as the Main protease or Mpro that plays a key role in mediating viral replication. This is an attractive drug target for this virus, and as humans don't naturally have this enzyme, compounds that target Mpro are likely to have low toxicity. They discovered that Withanone (Wi-N), a natural compound derived from Ashwagandha (Withaniasomnifera) and Caffeic Acid Phenethyl Ester (CAPE), an active ingredient of New Zealand propolis, have the potential to interact with and block the activity of Mpro. While well-trusted reputation of Ashwagandha as an immunity enhancer forms a basis of the recent initiative of the Indian Government in forming an Interdisciplinary Task Force to launch its clinical research studies related to SARS-CoV-2 and the COVID-19 disease, the current research report of this team provide hints on its direct anti-viral activities.

Ref: <https://home.iitd.ac.in/news-covidashwagandha.php>



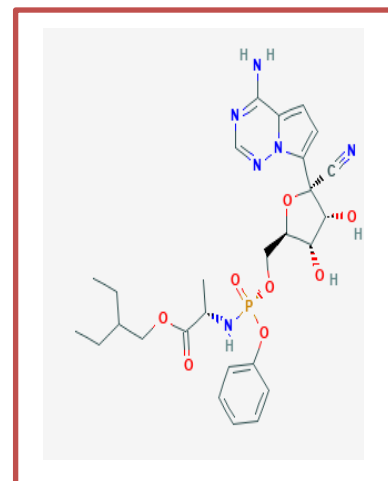
Withanone and CAPE are predicted to block the viral protein (M^{pro}) required for its replication. Withanone is also predicted to block cell membrane receptor required for entry of virus to the cells.

Remdesivir Receives FDA Emergency Use Authorization for the Treatment of COVID-19

The USFDA issued an emergency use authorization for the investigational antiviral drug remdesivir for the treatment of suspected or laboratory-confirmed COVID-19 in adults and children hospitalized with “severe disease”, meaning they have low blood oxygen levels, need oxygen therapy or are on a mechanical ventilator. The FDA acted after preliminary results from a NIH-sponsored clinical trial showed that Gilead Sciences’s remdesivir shortened the time to recovery by 31%, or about four days on average, for hospitalized Covid-19 patients. The study of 1,063 patients is the largest and most strict test of the drug and included a comparison group that received just usual care so remdesivir’s effects could be rigorously evaluated. Those given the drug were able to leave the hospital in 11 days on average versus 15 days for the comparison group. The drug also might be reducing deaths, although that’s not certain from the partial results revealed so far. The drug has not been tested on people with milder illness, and currently is given through an IV in a hospital. No drugs are approved now for treating the coronavirus, and remdesivir will still need formal approval. The FDA can convert the drug’s status to full approval if Gilead or other researchers provide additional data of remdesivir’s safety and effectiveness.

Ref1: <https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-issues-emergency-use-authorization-potential-covid-19-treatment>

Ref2: <https://www.theguardian.com/world/2020/may/01/remdesivir-emergency-use-fda-us-coronavirus>



FDA has approved first non-hormonal contraceptive vaginal gel

The gel, marketed as Phexxi by Evofem bioscience, is the first non-hormonal, on-demand, vaginal pH regulator contraceptive. It is designed to maintain vaginal pH within normal range of 3.5-4.5, creating an acidic environment that is inhospitable to sperm. Made up of lactic acid, citric acid, and potassium bitartrate (1.8%, 1%, and 0.4%, respectively), it is supplied in a pre-filled single-dose (5 grams) vaginal applicator. The gel demonstrated an efficacy rate of 86.3% during a phase 3 clinical trial for the prevention of pregnancy. Phexxi offers women protection and control - on their terms and at their discretion - without the use of hormones.

Ref: www.accessdata.fda.gov/scripts/cder/daf/index.cfm?event=overview_process&ApplNo=208352

WORDPUZZLE

1. Non fluorinated hydrocarbons are used in ____ which type of aerosol
2. Which type of paper protects a divided hygroscopic powder?
3. The oily or aqueous solutions that are administered rectally
4. Drugs regulatory bodies of India.
5. The half-life of conventional liposomes will be _____
6. Which equipment is used for determining the total surface area of the powder?
7. Silverson mixer is used for the preparation of _____
8. Phase 0 trial in human is also called as _____ studies.
9. One of the methods of preparing Tincture
10. Cascade impactor is used to evaluate _____ delivery system.
11. Where are IgM antibodies synthesized first in human?
12. Lithium are excreted through
13. In which crystalline form the solubility of drugs is high?
14. Water soluble ointment base
15. A substance which is designed to have no therapeutic value.

ANSWERS FOR LAST NEWSLETTER PUZZLE

Top to bottom: 1. Gold 2. Nasal 3. Pipette 5. Acidic 10. ANDA 11. HEPA 13. Span 14. Talc

Left to Right: 1. Griffin 2. One 6. Plastic 7. EDTA 8. Oil 9. Ear

Right to Left: 12. Aerosol 15. CTD

INTRESTING FACTS

1. The first electric hearing aid, called the Akouphone, was created by Miller Reese Hutchison in 1898.

2. The first blood glucose meter was invented by Anton H. Clemens in 1970.



3. C.TI's BlindSpotz™ technology is a portfolio of patented technology that created low-cost printable sensors for drugs that detects freezing, thawing, gradual warming, tampering and authentication.

4. The Gore Sta-Pure Flexible Freeze Container maintains package integrity after freezing at -86 deg C. (-123 deg F) and minimizes product loss due to package failure due to its durable design.

M	A	C	E	R	A	T	I	O	N	R	M
M	N	L	Q	E	H	T	W	R	E	S	I
S	E	Q	O	I	N	A	Q	T	D	A	C
U	X	T	V	G	X	E	E	N	P	L	R
T	L	K	A	E	O	M	M	U	P	I	O
E	A	M	D	S	O	R	L	A	R	V	D
F	C	O	V	T	T	M	C	E	S	A	O
G	I	D	P	A	O	A	T	A	E	Z	S
R	P	R	O	N	N	R	B	J	M	Q	E
J	O	Z	A	N	O	I	S	L	U	M	E
S	T	R	I	H	P	L	A	C	E	B	O
R	Y	V	S	O	C	S	D	C	J	J	P

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“learn from the best and believe. change, grow and become succeed”

Send your correct answers to psgcp.ceutics@gmail.com. The first three participants with correct answers will be acknowledged in the next issue.