

Timeline

How antibodies from llamas may lead to COVID-19 treatment

6:41 AM AEST

Data Science Is Helping to Explain Epileptic Seizures

6:40 AM AEST

NASA's IBEX charts 11 years of change at boundary to interstellar space

6:26 AM AEST

A fast self-test for COVID-19

6:24 AM AEST

Thousands connect virtually for Reunion 2020

6:23 AM AEST

Special Representative Jeffrey's Call with Russian Deputy Foreign Minister Vershinin

6:22 AM AEST

Van Ovest nominated to be next AMC commander

6:18 AM AEST

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6:18 AM AEST

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6:10 AM AEST

New billion-dollar coal mine proposed for Bowen Basin

6:08 AM AEST

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6:04 AM AEST

PPPL ramps up activities for diagnostics for ITER fusion experiment

5:56 AM AEST

COVID-19 threatens entire nervous system

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5:42 AM AEST

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Science

JUNE 11, 2020 7:54 PM AEST

Cold plasma against coronavirus

Ionised molecules of air are being tested for the treatment of Covid-19 patients

Many seriously ill Covid-19 patients must contend with more than just the coronavirus.

Approximately half of the people who were mechanically ventilated yet still died had acquired additional infections in hospital. Cold plasma therapy could prevent these superinfections and reduce the risk of hospital staff becoming infected with coronavirus.

Preliminary tests carried out by terraplasma medical GmbH, the subsidiary of the Max Planck spin-off terraplasma, suggest that cold atmospheric plasma (i.e. weakly ionised air) can render Sars harmless in cell cultures. In order to clarify whether cold plasma can actually help treat Covid-19, in in both cell cultures and Covid-19 patients have been initiated together with various partners.



A possible option for the treatment of Covid-19 patients. terraplasma medical is testing the further development of a device originally intended to disinfect chronically infected wounds, among other things, in the treatment of Covid-19 patients requiring mechanical ventilation.

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Plasma is the fuel of the stars. In a highly diluted cold variant, ionised gas – or more precisely, ionised gas – inactivates bacteria in chronically infected wounds. As studies, conducted with various partners by J Zimmermann, CMO, have already shown in the past, atmospheric plasma can also inactivate virus and adenoviruses in solution. It could also help treat Covid-19 patients. “The initial tests suggest the atmospheric plasma kills corona viruses in solution”, says Jens Kirsch, CEO of terraplasma medical. ‘particularly interesting for us because the viruses are also found in fluids – for example, saliva – on membranes’.

The researchers from terraplasma medical carried out the first investigations together with a team Albrecht von Brunn, a scientist at the Max von Pettenkofer Institute of the Ludwig-Maximilians-Universität Munich. The preliminary results, which suggest that cold plasma can kill the coronavirus, have prompted terraplasma medical to conduct further studies. Together with the Fraunhofer Institute for Toxicology and Experimental Medicine, terraplasma medical will carry out comprehensive analyses how cold atmospheric plasma affects viruses in cell cultures. terraplasma medical is also planning studies on patients together with hospitals of the University of Regensburg and the LMU. Because the researchers can build on previous investigations, the clinical trials are possible without the usual animal experiments. “We already know plasmas do not damage the mucous membranes if we use the correct plasma design and the dose does not exceed certain limits”, says Gregor Morfill, former Director of the Max Planck Institute for Extraterrestrial Physics and founder of terraplasma, and scientific consultant of terraplasma medical.

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5:36 AM AEST

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5:22 AM AEST

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5:20 AM AEST

An ion channel senses cell swelling and helps cells to choose a response

5:14 AM AEST

Looking Up to Stars Can Reveal What's Deep Below

5:08 AM AEST

Controlling invasive milfoil with lake-wide herbicide could do more harm than good to native plants

5:02 AM AEST

Red runner burglar

5:00 AM AEST

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4:56 AM AEST

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Supporting communities across Northwest Territories

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Can cold plasma also prevent the virus from spreading to the lu

By conducting the clinical trials, the researchers hope to answer various questions. They want to know if treatment with cold plasma can prevent mechanically ventilated Covid-19 patients from becoming i hospital germs (thus considerably improving the chances of a cure) as well as whether ionised air si reduces the viral load in the mouth, nose, and throat of these patients. This could additionally help risk of infection for medical staff in intensive care units. "We hope that in the long term we will also prevent the virus from spreading from the mouth, nose, and throat to the lower respiratory tract of patients whose lungs are still free of the virus", says Kirsch. "We could thus reduce the number of C patients requiring treatment in intensive care units or mechanical ventilation".

In order to be able to use the cold plasma in the upper respiratory tract, terraplasma medical has c device used to treat chronically infected wounds. However, before doctors can treat the first Covid- the clinical trials must first be approved by the respective ethics committee. "We expect the first res seven months", says Gregor Morfill.

PH

/Public Release. View in full here.

Tags: animal, bacteria, clinical trials, coronavirus, covid-19, device, fuel, gas, hospital, infection, Max Society, medicine, Munich, research, spin-off, testing, university, viruses



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