

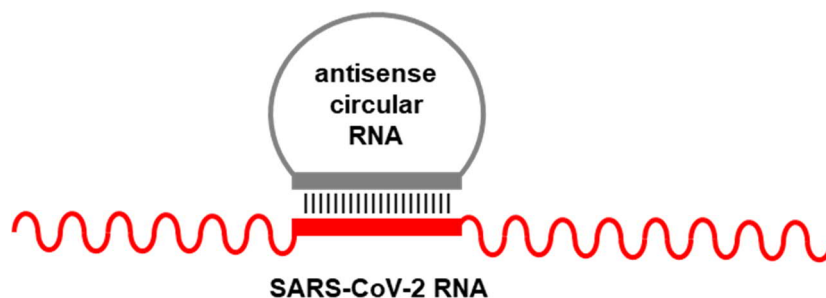
## Antisense Circular RNA as Therapeutic Compound for Treatment of Covid-19

Circular RNA, Covid-19, Therapy, Coronavirus, Compound, Post-exposure Prophylaxis, SARS-CoV-2

### DESCRIPTION OF TECHNOLOGY

**Feature:** A new artificial circular RNA prevents SARS coronavirus 2 (SARS-CoV-2) from replicating in infected cells.

**Advantage:** The new circular RNA is very stable, it can easily be transfected into cells. It efficiently recognizes its target sequence in the SARS coronavirus 2 genome, thereby inhibiting viral protein biosynthesis and virus proliferation.



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**Benefit:** The new circular RNA enables specific binding and inhibition of SARS coronavirus 2 and thus opens up new therapeutic approaches for the treatment of Covid-19. This mechanism of action can effectively prevent and treat infections with SARS-CoV-2.

### APPLICATION FIELDS

- Therapy of Covid-19
- Early prevention of infections by SARS-CoV-2
- Post-exposure prophylaxis (PEP) after contact with Covid-19 patients

### AT A GLANCE ...

#### Application Fields

- Therapy of Covid-19
- Infectiology
- Post-exposure prophylaxis (PEP)

#### Business

- Pharmaceutical industry
- Medical compound company
- Speciality chemicals company

#### USP

- New mechanism of action
- Designer circRNA for treatment of Covid-19

#### Development Status

- Circular RNAs with specific binding functions to SARS-CoV-2 were produced
- Circular RNAs were functionally validated in cell culture
- Further steps: Scale-up and optimization (RNA modifications, nanoparticle packaging), animal experiments, clinical studies

#### Patent Status

The priority application was filed with the European Patent Office on December 03<sup>th</sup>, 2020. An international patent application (PCT) is possible.

## ADVANTAGES OVER THE PRIOR ART

The new circular RNA is much more stable than the corresponding linear RNA.

Circular RNA is designed to bind specifically to sequence-conserved regions of SARS-CoV-2 genome and subgenomic RNAs.

Circular RNA can easily be synthesized in preparative amounts and introduced into cells.

## STATE OF THE PRODUCT DEVELOPMENT

The new circular RNA can be produced by *in vitro* transcription and circularization. Alternative, it can also be expressed in cell lines.

## MARKET POTENTIAL

The new SARS-CoV-2 has made the disease Covid-19 a pandemic with effects on all aspects of human life by spreading rapidly across the whole world. Despite the immense progress in the treatment of Covid-19 patients in recent months, there is an urgent need for effective and well-tolerated therapeutic options, alternatively to the current mRNA-based and other vaccination strategies.

Despite the launch of vaccines against SARS-CoV-2, Covid-19 will continue to have a huge impact on healthcare, economy and society worldwide in the coming years. Therefore, the market potential is considered to be very large.

## COOPERATION OPPORTUNITIES

On behalf of its shareholder Justus-Liebig-Universität Giessen TransMIT GmbH is looking for cooperation partners or licensees for further development in Germany, Europe, US, and Asia.

## A TECHNOLOGY OF



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