

THERAPEUTICS FOR COVID-19 PATIENTS



ISTITUTO
ITALIANO DI
TECNOLOGIA



UNIVERSITÀ
DEGLI STUDI
DI MILANO

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PATENT STATUS: Secrecy

N° PRIORITY: 102021000004007

DATE PRIORITY: 22/02/2021

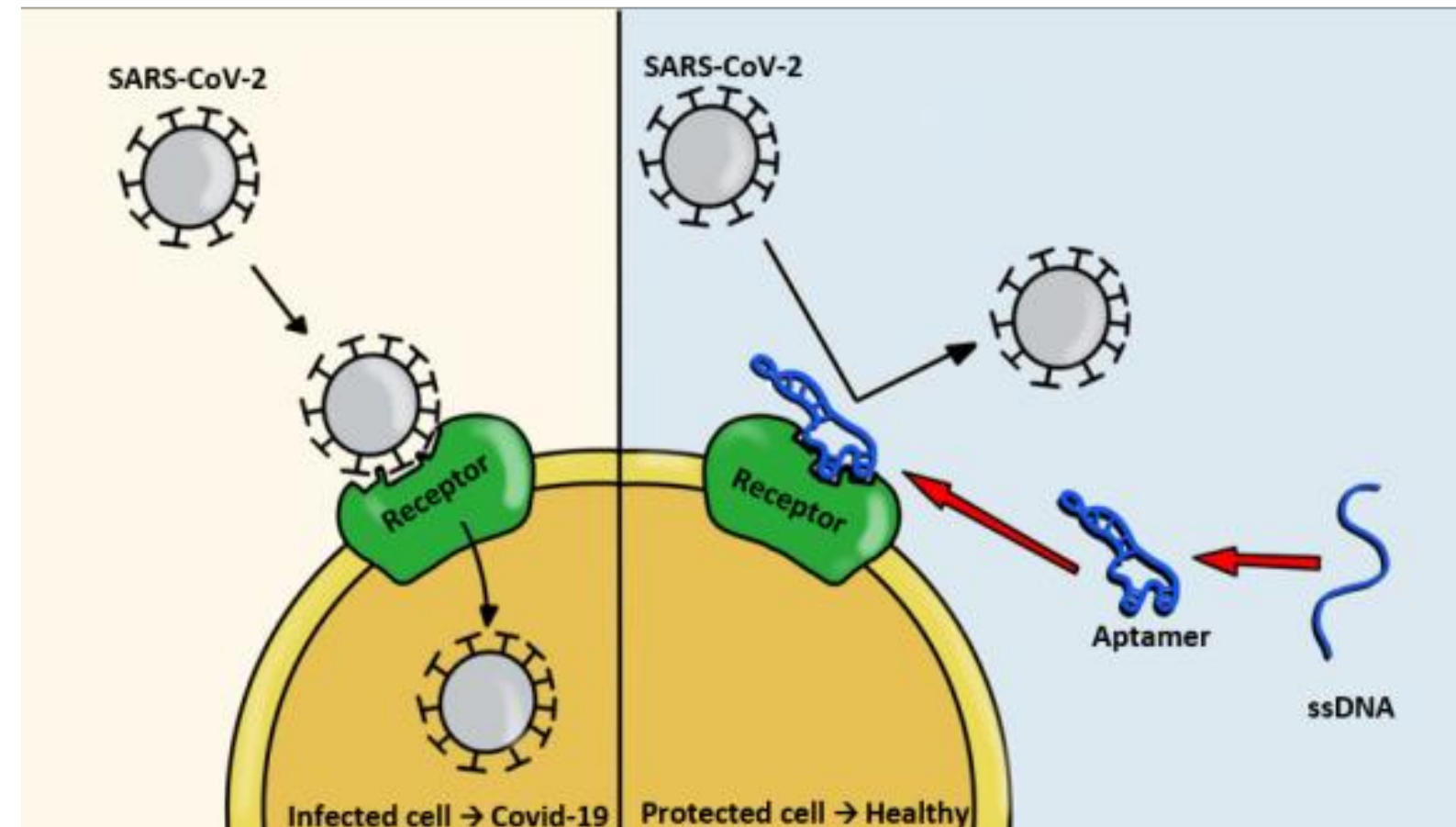
Invention



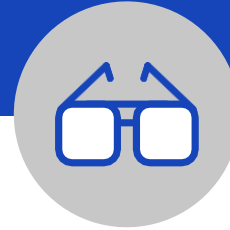
The invention concerns the use of DNA aptamers that can shield the SARS-CoV-2 binding site on the cell, and halt the cell-to-cell spreading of coronavirus. The novel oligonucleotide, and the anti-coronavirus strategy based on the protection of the target cell, are innovative technologies that could be developed into a novel COVID-19 therapy that is effective against variants of the virus.

The SARS-CoV-2 neutralising agents developed so far (vaccines, monoclonal antibodies, or small molecules) are directed against viral proteins: mutations occurring in such proteins can therefore give rise to treatment-resistant variants and prolong the pandemic. The current invention changes the paradigm by protecting the target cell instead of targeting the virus itself. We designed two aptamers that bind to the human receptor ACE2 and halt the interaction of the coronavirus with the cells preventing the cell-to-cell spreading of viral infection. Since SARS-CoV-2 and its mutant variants share the same infection mechanism, our aptamers might be developed as therapeutics against COVID19 due to SARS-CoV-2 variants that are resistant to current neutralising agents and against future infections by arising coronaviruses. DNA aptamers show fewer side effects and less immunogenicity than antibodies or other polypeptides.

Drawings
& pictures



Industrial applications



- Prevenzione o cura del COVID-19;
- Prevenzione o cura delle infezioni da ceppi mutati di SARS-CoV-2;
- Profilassi o terapia antivirale per nuovi ceppi SARS;
- Profilassi o terapia antivirale delle infezioni da SARS nell'ambito veterinario.

Possible
developments



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Research of industrial partnership / financing to start validation

For more information:



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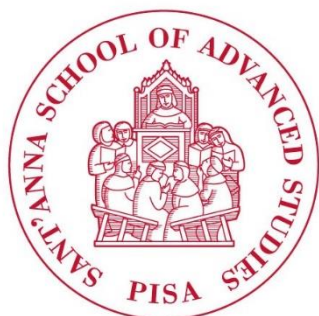
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