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SARS-CoV-2 (Covid-19): A short update on molecular biochemistry, pathology, diagnosis and therapeutic strategies

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Abstract

The ongoing coronavirus (covid-19) pandemic highlights the need for global scientific cooperation to advance our understanding of the immunological, molecular and biochemical mechanisms causing infection by this virus. Better understanding of key processes has allowed the development of vaccines in record time, and of agents with the potential to treat and neutralize current and future coronavirus outbreaks. To date, clinically effective agents for prevention and treatment of covid-19 infections are limited. This review provides a brief synopsis regarding the molecular biology, pathology and laboratory tests commonly used in the diagnosis and prognosis of covid-19, as well as the development of vaccines and therapeutic strategies to manage its current and future mutations.

Keywords

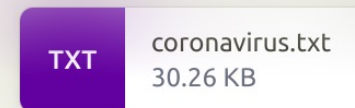
Coronavirus, SARS-CoV-2, Covid-19, vaccine, treatment, therapy

Introduction

The global pandemic resulting from a new mutation in a coronavirus (CoV) is still in progress. Following the initial genomic characterisation in December 2019, the immediate focus was on preventive measures to minimize the spread of infection. Extensive use of laboratory testing has



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what is the role of ACE2 and what is the capital of Alaska?



There are a couple key points about the ACE2 receptor and its role in SARS-CoV-2 infection:

- ACE2 is an enzyme found on the surface of cells in the lungs, arteries, heart, kidney and intestines. It normally functions to regulate blood pressure.
- SARS-CoV-2 uses ACE2 as an entry receptor to gain access into human cells. The spike protein on the virus binds to ACE2.
- Binding to ACE2 allows the virus to fuse with the host cell membrane and inject viral genetic material inside.
- ACE2 levels and distribution on human cells appear to influence susceptibility to infection and disease severity.

As for your second question, the capital of Alaska is Juneau.



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what is the role of ACE2 and what is the capital of Alaska?

Source relevance score: 0.09

No strict answer found. Try "Broad".

Missing:

- what is the capital of Alaska

Sentence Selection

☒ Strict

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LLM Synthesis

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Translate

Score Answer Sentences

The role of ACE2 is to serve as a receptor for both SARS-CoV-2 (covid-19) and SARS-CoV-1 viruses. It is found on the viral envelope membrane and the host receptor, specifically in the lung alveolar epithelium and intestinal enterocytes. The binding of the viruses to ACE2 is facilitated by the C-terminal domain. The higher binding affinity of SARS-CoV-2 to ACE2 compared to SARS-CoV-1 is believed to contribute to its greater infectivity. Dimerization of the peptide domain of ACE2 allows for the simultaneous binding of two SARS-CoV-2 viruses, enhancing viral load.

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