CREATIVE BIOMART®
Diagnostic Proteins

Native Human Coronavirus 229E Purified Viral Lysate

Product Information

Cat#

HUM-296

Product Name

Native Human Coronavirus 229E Purified Viral Lysate

Description

Human coronavirus 229E viral lysate produced in cell culture and purified using sucrose density gradient ultracentrifugation. Heat-inactivated and tested for absence of viral growth in validated tissue culture infectivity assays.

Type

Native

Gene

Human Coronavirus 229E Viral Lysate

Species

Human Coronavirus 229E

Synonyms

Human Coronavirus 229E Viral Lysate

Notes

This product is intended for research and manufacturing uses only. It is not a diagnostic device. The user assumes all responsibility for care, custody and control of the material, including its disposal, in accordance with all regulations.

Applications

Applications include immunoassay development, Western blotting, dot blotting and other protein-based assays.

Background

Tel: 1-631-559-9269 1-516-512-3133
Email:info@creative-biomart.com
Fax:1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

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The coronaviruses are a family of related RNA viruses within the order Nidovirales. They contain a positive-sense, single-stranded, 26-32kb RNA genome protected by a nucleocapsid of helical symmetry. Their viral capsids are surrounded by a lipid envelope, which is interrupted by trimeric Spike proteins that project from the capsid surface.
Prior to early 2000, only two human coronaviruses were recognized: Human coronavirus 229E (HCoV-229E) and Human coronavirus OC43 (HCoV-OC43). However, in late 2002, a third human coronavirus (SARS-CoV) was implicated as the aetiological agent of severe acute respiratory syndrome (SARS) and since then, several more human coronaviruses have been identified, including HCoV-NL63 associated with upper and lower respiratory tract infections (Van der Hoek, 2004) and HCoV-HKU1 in patients with pneumonia (Woo et al., 2005), as well as the more lethal, Middle East respiratory syndrome (MERS) coronavirus and Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2). Like the other mild cold-causing human coronaviruses, HCoV-NL63, HCoV-OC43 and HCoV-HKU1, HCoV-229E has a worldwide distribution, with seasonal surges occurring in the winter months (Wat et al., 2004). Like the other cold-causing coronaviruses, reinfection with HCoV-229E is common. The reason for this is not yet clearly defined but may be due to a weak antibody response (Raoult et al., 2020).
During coronavirus replication, numerous proteins are syntheses by the host cell, including Nucleoprotein, Spike, Envelope, Membrane, non-structural proteins and accessory proteins. Of particular importance in the development of serological diagnostics and vaccines are the Spike proteins, which are easily recognised by host antibodies given their exposure to the external environment. The Spike protein's receptor binding domain (RBD) is also responsible for binding host cell-surface receptors to mediate cell entry, making it the target of neutralising antibodies. Nucleoprotein is also a popular target for countermeasures, given its high sequence conservation.

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