Native Human Parainfluenza Virus Type 4A Lysate

Cat. No. HUM-426 **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Human Parainfluenza Virus Type 4A is purified from LLC-mk2 cells using sucrose density gradient ultracentrifugation, disrupted in the presence of detergent and heat inactivated. Viral lysates can be utilized as an antigen, as a source for the purification of viral proteins, or for the detection of viral antibodies.
Background	Human parainfluenza viruses (HPIV) belong to a diverse group of enveloped single-stranded RNA viruses within the Paramyxoviridae family, a large and expanding group of viruses that includes metapneumovirus and the mumps, measles and respiratory syncytial viruses. Paramyxoviruses are enveloped animal viruses with non-segmented negative-strand RNA genomes (complementary to mRNA), which are identified almost exclusively in nucleocapsid structures. The HPIV genome comprises approximately 15,000 nucleotides and encodes six common structural proteins: 'large' (L) nucleocapsid protein, P and N, which are closely associated with viral RNA, haemagglutinin-neuraminidase (HN), and fusion (F) and membrane (M) proteins (reviewed in Pawełczyk & Kowalski, 2017). HPIVs bind and replicate in the ciliated epithelial cells of the upper and lower respiratory tract and the extent of the infection correlates with the location involved (reviewed in Branche & Falsey, 2016). Human parainfluenza virus type 3 enters cells by directly fusing with the cell membrane. During entry, the viral surface glycoproteins HN, a receptor-binding protein, and F cooperate to mediate fusion upon receptor binding (Xu et al., 2013). The HN and fusion glycoproteins are the major targets for neutralizing antibodies (reviewed in Branche & Falsey, 2016). Human rhinovirus (HRV), respiratory syncytial virus (RSV), influenza virus and coronaviruses are considered the most important viral respiratory pathogens. However, seasonal

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	HPIV epidemics result in a significant burden of disease in children and account for 40% of pediatric hospitalizations for lower respiratory tract illnesses (LRTIs) and 75% of croup cases. A wide spectrum of illness including colds, croup, bronchiolitis, and pneumonia are attributed to these ubiquitous pathogens. The most severe disease is found among immunocompromised patients and treatment at present remains largely supportive. Viral coinfections may also be a cause of pneumonia, including coinfection with both HPIV and human coronaviruses such as HCoV-229E (Gonzales Zamora, 2018). Several promising antiviral drugs are in development and are in early-stage clinical trials. Continued research for new vaccines and therapeutics is therefore needed (reviewed in Branche & Falsey, 2016).
Applications	Appropriate for the development of immunoassays, Western blotting, dot blotting and other protein-based assays.
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.
Type	Native
ClassID 1	Infectious Disease

GENE INFORMATION

Synonyms	Human Parainfluenza Virus Type 4A Lysate

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