



Rotavirus capsid (0531): sc-69943

BACKGROUND

Rotaviruses, a genus of the family *Reoviridae*, are double-stranded RNA viruses that are one of the leading causes of gastroenteritis in infants and young children. The virus exists as seven species, designated Rotavirus A, B, C, D, E, F and G, with Rotavirus A being the most common cause of infection. Rotavirus is transmitted via the fecal-oral route and, once in the body, infects cells of the small intestine, producing an enterotoxin that alters the permeability of the cell wall, causing severe diarrhea and dehydration. The entry of Rotavirus into cells occurs by either direct penetration of the cell membrane or endocytosis followed by membrane vesicle solubilization, both of which are facilitated by the Rotavirus capsid. The Rotavirus capsid is composed of three concentric protein layers, the outer two of which are called VP4 and VP7 and are sacrificed in a calcium-dependent manner during viral entry into the cell.

REFERENCES

1. Denisova, E., Dowling, W., LaMonica, R., Shaw, R., Scarlata, S., Ruggeri, F. and Mackow, E.R. 1999. Rotavirus capsid protein VP5* permeabilizes membranes. *J. Virol.* 73: 3147-3153.
2. Ludert, J.E., Ruiz, M.C., Hidalgo, C. and Liprandi, F. 2002. Antibodies to Rotavirus outer capsid glycoprotein VP7 neutralize infectivity by inhibiting virion decapsidation. *J. Virol.* 76: 6643-6651.
3. Yu, J. and Langridge, W. 2003. Expression of Rotavirus capsid protein VP6 in transgenic potato and its oral immunogenicity in mice. *Transgenic Res.* 12: 163-169.
4. Benureau, Y., Huet, J.C., Charpilienne, A., Poncet, D. and Cohen, J. 2005. Trypsin is associated with the Rotavirus capsid and is activated by solubilization of outer capsid proteins. *J. Gen. Virol.* 86: 3143-3151.
5. Corthesy, B., Benureau, Y., Perrier, C., Fourgeux, C., Parez, N., Greenberg, H. and Schwartz-Cornil, I. 2006. Rotavirus anti-VP6 secretory immunoglobulin A contributes to protection via intracellular neutralization but not via immune exclusion. *J. Virol.* 80: 10692-10699.
6. Trask, S.D. and Dormitzer, P.R. 2006. Assembly of highly infectious Rotavirus particles recoated with recombinant outer capsid proteins. *J. Virol.* 80: 11293-11304.
7. Ruiz, M.C., Aristimuño, O.C., Díaz, Y., Peña, F., Chemello, M.E., Rojas, H., Ludert, J.E. and Michelangeli, F. 2007. Intracellular disassembly of infectious Rotavirus particles by depletion of Ca²⁺ sequestered in the endoplasmic reticulum at the end of virus cycle. *Virus Res.* 130: 140-150.
8. Montero, H., Rojas, M., Arias, C.F. and López, S. 2008. Rotavirus infection induces the phosphorylation of eIF2 α but prevents the formation of stress granules. *J. Virol.* 82: 1496-1504.
9. Libersou, S., Siebert, X., Ouldali, M., Estrozi, L.F., Navaza, J., Charpilienne, A., Garnier, P., Poncet, D. and Lepault, J. 2008. Geometric mismatches within the concentric layers of Rotavirus particles: a potential regulatory switch of viral particle transcription activity. *J. Virol.* 82: 2844-2852.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

SOURCE

Rotavirus capsid (0531) is a mouse monoclonal antibody raised against Rotavirus capsid.

PRODUCT

Each vial contains 100 μ g IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Rotavirus capsid (0531) is recommended for detection of intact RRV, WA and bovine strains of Rotavirus origin by solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.