JNK1 Recombinant Adenovirus (Dominant Negative)

CATALOG NUMBER: ADV-115 **STORAGE:** -80ºC

QUANTITY AND CONCENTRATION: 50 µl, 1 x 10^{11} VP/mL in TBS containing 10% Glycerol

Background

Recombinant adenoviruses have tremendous potential in both research and therapeutic applications. There are numerous advantages in using an adenovirus to introduce genetic material into host cells. The permissive host cell range is very wide. The virus has been used to infect many mammalian cell types (both replicative and non-replicative) for high expression of the recombinant protein. Recombinant adenoviruses are especially useful for gene transfer and protein expression in cell lines that have low transfection efficiency with liposome. After entering cells, the virus remains epichromosomal (i.e. does not integrate into the host chromosome so does not activate or inactivate host genes). Recently, recombinant adenoviruses have been used to deliver RNAi into cells.

Mitogen-activated protein kinases (MAPK), including ERK1/2, p38, and JNK1/2, are important regulators of cell function. The ERK MAPKs are most frequently activated by mitogens, whereas the JNK and p38 MAPKs are strongly responsive to inflammatory signals. The stress-activated protein kinases have also been termed JNK protein kinases because they were identified as the principal c-Jun N-terminal kinases. The JNK family kinases are activated by cell stress-inducing stimuli such as heat shock, UV irradiation, hyperosmolarity, and ischemia/reperfusion injury, and by activation of specific cell surface receptors. The JNK family includes 1 2, or 3 and their splice isoforms. The provided recombinant adenovirus contains dominant negative form (AF) of human JNK1 sequence. The JNK1 (AF) mutant cannot be phosphorylated, since the dual phosphorylation site T183/Y185 has been changed to A183/F185.

Safety Consideration

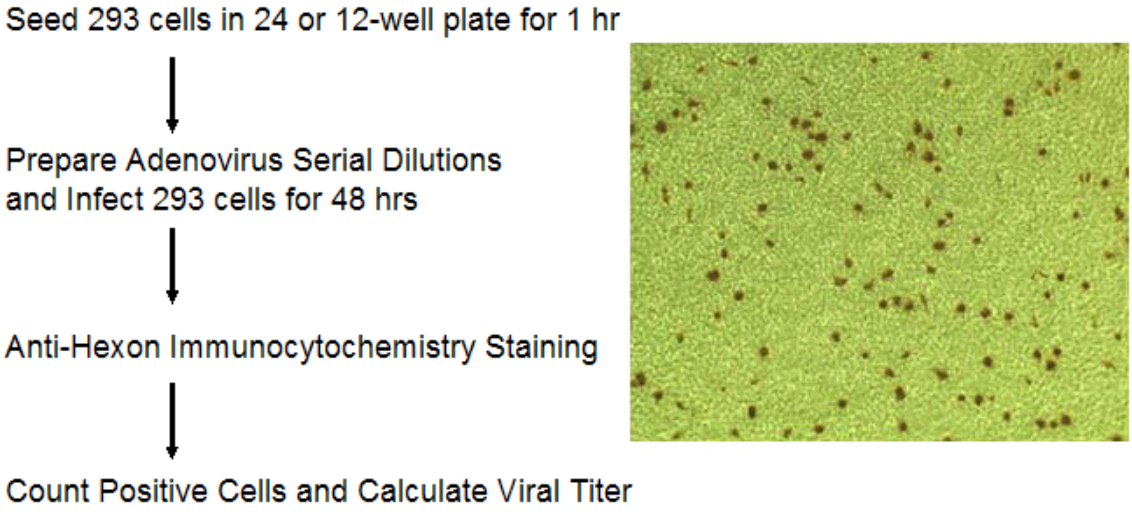
Remember that you will be working with samples containing infectious virus. Follow the recommended NIH guidelines for all materials containing BSL-2 organisms. Always wear gloves, use filtered tips and work under a biosafety hood.

Methods

The appropriate amount of viruses used for infecting cells is critical for the outcome of your experiments. If not enough virus is used, it will not give 100% of infection. If too much virus is used, it will cause cytotoxicity or other undesired effects. The amount of adenovirus cell surface receptors vary greatly among different cell types therefore the optimal concentration differs dramatically between cell types. A range of 10-200 MOI (multiplicity of infection) is used for most cell lines, but up to 1000 MOI may be used for lymphoid cell lines.

Traditionally, Infectivity particles are measured in culture by a plaque-forming unit assay (PFU) that scores the number of viral plaques as a function of dilution. In contrast to the 10-day infection of a classical plaque assay, Cell Biolabs' QuickTiter™ Adenovirus Titer Immunoassay Kit (Cat. #VPK-109)

only requires 2-day infection, and there is no agar overlay step. The kit antibody against hexon protein recognizes all serotypes of adenovirus by immunocytochemistry (see Flow Chart).



References

1. Bett AJ, Haddara W, Prevec L and Graham FL. (1994) *Proc Natl Acad Sci U S A.* 91:8802-6.
2. Robbins, P. D., Tahara, H., and Ghivizzani, S. C. (1998) *Trends Biotechnol.* 16, 35-40.
3. Huang, S., Stupack, D., Mathias, P., Wang, Y., and Nemerow, G. (1997) *Proc. Natl. Acad. Sci. U S A.* 94, 8156-8161.
4. Bergelson, J. M., J. A. Cunningham, G. Droguett, E. A. Kurt-Jones, A. Krithivas, J. S. Hong, M. S. Horwitz, R. L. Crowell, and R. W. Finberg. (1997) *Science* 275:1320-1323.\
5. Davis R. J. (1999) *Biochem. Soc. Symp.* 64:1-12.

Recent Product Citations

1. Jiang, S. et al. (2014). Regulation of hepatic insulin receptor activity following injury. *Am J Physiol Gastrointest Liver Physiol*. **306**:G886-G892.
2. Jiang, S. et al. (2011). Role of Inhibitory κB Kinase and c-Jun NH2-terminal Kinase in the Development of Hepatic Insulin Resistance in Critical Illness Diabetes. *Am. J. Physiol Gastrointest. Liver Physiol.* **301**:G454-G463.
3. Black, S. et al. (2007). Tissue-specific mechanisms for CCN2/CTGF persistence in fibrotic gingiva. *J. Biol. Chem.* **282(21)**:15416-15429.
4. Lee, J.Y. et al. (2007). Effects of transcription factor activator protein-1 on interleukin-8 expression and enteritis in response to Clostridium difficile toxin *A. J. Mol. Med*. **85**:1393-1404.

Warranty

This product is for RESEARCH USE ONLY; not for use in diagnostic procedures.

Contact Information

Cell Biolabs, Inc.
7758 Arjons Drive
San Diego, CA 92126
Worldwide: +1 858-271-6500
USA Toll-Free: 1-888-CBL-0505
E-mail: tech@cellbiolabs.com
www.cellbiolabs.com