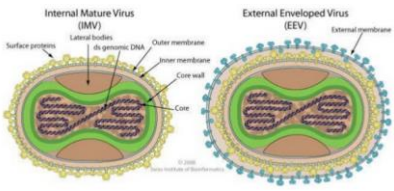
ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

**Vaccinia virus (VACV or VV or Small Prox) A33R Antibodies**

**Cat. # VACV14-M** **Mouse Monoclonal** Anti-Vaccinia virus A33R protein IgG, aff pure **SIZE:** 0.5 ml

Vaccinia virus (VACV or VV) is a large, complex, enveloped virus belonging to the poxvirus family. Viral particles (virions) are generally enveloped (external enveloped virion- EEV), though the intracellular mature virion (IMV) form of the virus, which contains different envelope, is also infectious. They vary in their shape depending upon the species but are generally shaped like a brick or as an oval form similar to a rounded brick. The virion is exceptionally large, its size is around 200 nm in diameter and carries its genome in a single, linear, dsDNA, which encodes for approximately 250 genes.




Vaccinia virus was used for smallpox vaccination via inoculation into the superficial layers of the skin of the upper arm. However, with the eradication of smallpox, routine vaccination with Vaccinia virus has ceased. Recent interest in vaccinia has focused on its possible usage as a vector for immunization against other viruses. Currently, the vaccine is only administered to health care workers or research personnel who have a high risk of contracting the Variola virus, and to the military personnel of the United States of America. Due to the present threat of smallpox-related bioterrorism, there is a possibility the vaccine may have to be widely administered again in the future.

**Lister** (also known as Elstree): the English **vaccine strain** used by Leslie Collier for vaccine production during the World Health Organization Smallpox Eradication Campaign (SEC). **Modified vaccinia Ankara (also known as MVA)**: a highly attenuated strain created by passaging vaccinia virus several hundred times in chicken embryo fibroblasts. Unlike some other vaccinia strains it may be safer to use in humans who have weaker immune systems due to being very young, very old, having HIV/AIDS, etc.

Six proteins, encoded by the F13L, **B5R**, **A33R**, A34R, A36R, and A56R open reading frames (ORFs), have been identified as constituents of the IEV or EEV membrane. **A33** is a type-II integral membrane glycoprotein, forming a disulfide-bonded homodimer modified with N- and O- linked glycosylations and acylation and found on the surface of extracellular virions (EV) and infected cells. Using A33-based protein or DNA vaccines, several studies demonstrated the contribution of A33 to protection against VACV, ECTV and MXPV. A33R is 185aa (protein accession # P68617).

The vaccinia virus (VV) **A27L** gene encodes a 14 kDa protein that is required for the formation of intracellular enveloped virus (IEV) and, consequently, normal sized plaques. A27L protein is 110-aa (protein accession # AAN78218.2).

**B5R**, a 561-aa membrane protein containing ankyrin repeats that mediate protein-protein interactions and is related to the regulators of complement activation (RCA) superfamily. Its transmembrane domain is the major determinant for targeting the B5R protein to the outer membrane of EEV (extracellular enveloped virus) and for supporting EEV formation, thus playing an important role in the process of virus envelopment and release. B5R is essential for efficient wrapping of IMV, actin tail formation, normal plaque size, virus virulence, incorporation of the protein into EEV and for EEV formation.

## Source of Antigen and Antibodies

| | |
|---|---|
| **Antigen** | New York City Board of Health (NYCBOH) strain |
| **Ab Host/type** | Mouse monoclonal IgG2b purified (designated VXV14-M, clone TV46) supplied in PBS, pH 7.4, 0.1% BSA and and 0.01% azide |
| **2-Ab** | **Goat Anti-mouse IgG-HRP conjugate** Cat # 40320 (AP, biotin, FITC conjugates also available) |

| | |
|---|---|
| **-ve control IgG** | Cat # 20008-1, Mouse (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as –ve control |

**VACV14-M Suggested antibody Dilutions**

ELISA/Western 1:1000-:1:5000
IHC: 1:500-1:2000

**Specificity of antibodies**

Antibodies are reactive with the Lister & MVA strains of Vaccinia and Monkeypox virus or infected cells. Does not crossreact with Parainfluenza (1-3), RSV, Adeno, Influenza A&B or HSV1 or with uninfected cells. Reactive with free virus + infected cells. Specific to the **A33R protein**. Functions in ELISA and IFA.

**General References:** Tolonen N (2001) Mol. Niol. Cell 12, 2031-20346; Smith GL (2002) J. Gen. Virol. 83, 2915-2931; Davies MV (1993) J. Virol. 67, 1688-1692; Vanderplasschen, A (2003) Current Gene Ther. 3, 583-595; Gubser C (2004) J. Gen. Virol. 85, 105.

*This product is for In vitro research use only.

**Other Related Items from ADI**

| AntibodyType | Catalog# | ProdDescription |
|---|---|---|
| Rabbit-Poly | VXV11-BTN | Anti-Vaccinia virus IgG-Biotin conjugate |
| Rabbit-Poly | VXV11-FITC | Anti-Vaccinia virus IgG-FITC conjugate |
| Rabbit-Poly | VXV11-HRP | Anti-Vaccinia virus IgG-HRP conjugate |
| Rabbit-Poly | VXV11-S | Anti-Vaccinia virus (lister) antiserum |
| Mouse-Mono | VXV13-M | Mouse Monoclonal Anti-Vaccinia virus IgG, aff pure |
| Mouse-Mono | VXV13-M | Mouse Monoclonal Anti-Vaccinia virus A27L protein IgG, aff pure |
| Mouse-Mono | VXV14-M | Mouse Monoclonal Anti-Vaccinia virus A33R protein IgG, aff pure |

VACV14-M 150410A

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com
☎ (800) 786-5777; (210) 561-9515; **Fax**: (210) 561-9544; **Web Site**: www.4adi.com