

Product Specification Sheet

**Varicella Zoster Virus (VZV/chickenpox) antigens**

□ Cat. # VZV15-N-500

Varicella Zoster Virus (VZV/chickenpox) antigens/proteins (VZ-10/MRC)

SIZE: 500 ul

**Varicella zoster virus (VZV)** is one of eight herpes viruses known to infect humans and other vertebrates. It commonly causes chicken-pox in children and adults and herpes zoster (**shingles**) in adults and rarely in children. As with the other herpesviruses, VZV causes both acute illness and lifelong latency. Before vaccination became widespread, acute primary infection (**varicella or "chickenpox"**) was common during childhood—especially in temperate climates. Primary infection is much less common in recent years as a result of childhood vaccination, but still may occur in unvaccinated individuals and in instances of vaccine failure. Varicella usually is a benign and self-limiting illness, but can be more severe in adults and in individuals with cellular immunodeficiency. These individuals are at much higher risk of pneumonia and disseminated disease with visceral involvement.

Zoster typically presents as a painful, localized cutaneous eruption occurring along 1 or more contiguous dermatomes. As with varicella, zoster usually is self-limited in the immunocompetent host, but immunocompromised persons are at risk of more severe illness with cutaneous or visceral dissemination. Pain is a frequent complication of zoster, and pain that persists following complete healing of cutaneous lesions, referred to as post-therapeutic neuralgia, can be debilitating and difficult to control.

Humans are the only known natural hosts of VZV. Transmission of VZV occurs through direct contact with infectious lesions or by inoculation of aerosolized infected droplets onto a susceptible mucosal surface. The virus is transmitted easily; the rate of secondary cases of varicella in susceptible household contacts typically exceeds 90%. Infectivity usually begins 1-2 days before the onset of rash, and patients remain infectious until all vesicular lesions are dried and crusted. In the immunocompetent host, the period of infectiousness is usually 5-7 days after the lesions first appear. In immunocompromised patients, however, healing can be slow and patients may remain infectious for up to several weeks.

VZV genome is a linear duplex DNA molecule, a laboratory strain has 124 Kb. VZV virions are spherical and 180–200 nm in diameter. Their lipid envelope encloses the 100 nm nucleocapsid of 162 hexameric and pentameric capsomeres arranged in an icosahedral form. VZV is closely related to the herpes simplex viruses (HSV), sharing much genome homology. The known envelope glycoproteins (gB, gC, gE, gH, gI, gK, gL) correspond with those in HSV; however, there is no equivalent of HSV gD. There are at least five clades of this virus. Clades 1 and 3 include European/North American strains; clade 2 are Asian strains, especially from Japan; and clade 5 appears to be based in India. Clade 4 includes some strains from Europe but its geographic origins need further clarification.

**VZV vaccines:** Varivax (Merck) is a chickenpox vaccine for children, adolescents and adults. Zostavax is a more concentrated formulation of the Varivax vaccine, designed to elicit an immune response in older adults whose immunity to VZV wanes with advancing age.

**Source of Antigen and Antibodies**

VZV (strain VZ-10) is grown in MRC-5 cells and VZV antigens extracted by sonication and centrifugation using proprietary methods. The antigen preparation is partially purified to reduce host cell components and contains predominantly VZV antigens. The antigen is inactivated using gamma radiation. However, it must be treated as if infectious and properly disposed. The purification process yields a VZV antigen which has a high sensitivity and low background in the ELISA assay. The final VZV antigen preparation contains some HCP from MRC-5 and culture medium proteins. It is supplied in PBS, pH 7.4 and 0.1% azide as preservative. The antigen preparation may be briefly sonicated (5 secs) before use.

Typically, VZV antigen are used for ELISA and rapid tests for the diagnosis of VZV virus or the presence of antibodies in patients samples. Diagnosis can be made by acute and convalescent paired sera showing a four-fold increase in antibody titer to the VZV Virus antigen.

Typical lot is ~1-2 mg/ml.

**Storage**

**Short-term:** unopened, undiluted liquid vials at –20oC.

**Long-term:** at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

**Stability:** 6-12 months at –20oC or below.

**General References:** Steiner I (2007) Lancet Neurol. 6, 1015-1028; Davison AJ (1986) J. Gen. Virol. 67, 1759-1816; Zell R (2011) J. Virol. 86, 1608-1622; Loparev VN 92007) J. Virol. 81, 12758-12765.

\*This product is for in vitro research use only.

**Related items from ADI...**

Catalog#	ProdDescription
VZV11-M	Monoclonal Varicella Zoster Virus (VZV/chickenpox) antigens IgG (pan, recognizes several VZV proteins)
VZV12-M	Monoclonal Varicella Zoster Virus (VZV/chickenpox) nucleocapsid (155 kda protein) IgG
VZV13-M	Monoclonal Varicella Zoster Virus (VZV/chickenpox) early gene 62 (175 kda) protein) IgG
VZV14-M	Monoclonal Varicella Zoster Virus gp1/IV (VZV/chickenpox) glycoprotein I/IV protein) IgG
VZV15-N-500	Varicella Zoster Virus (VZV/chickenpox) antigens/proteins (VZ-10/MRC)
VZV16-N-500	Varicella Zoster Virus (VZV/chickenpox) antigens/proteins (Rod Ellen/Vero cells)530-140-MMM Mouse Anti-Measles IgM ELISA kit, 96 tests, Quantitative
520-200-HVG	Human Anti-Varicella Zoster Virus (VZV/chickenpox) IgG ELISA, 96 tests, Quantitative
520-210-HVM	Human Anti-Varicella Zoster Virus (VZV/chickenpox) IgM ELISA, 96 tests, Quantitative
520-220-HVG	Human Anti-Varicella Zoster Virus (VZV/chickenpox) IgA ELISA, 96 tests, Quantitative
VZV15-N-500-Varicella-Zoster-Virus-Proteins	150608A

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