TEST: Varicella-Zoster IgG

PRINCIPLE:
Varicella (chickenpox) and zoster (shingles) represent different clinical manifestations of infection with the same agent, Varicella-zoster virus (VZV), a member of the *Herpesviridae*.
Varicella occurs most frequently in children and is characterized by a generalized vesicular exanthema often accompanied by fever. Zoster usually occurs in adults or immunocompromised patients (including those with AIDS) and consists of painful, circumscribed eruption of vesicular lesions with accompanying inflammation of associated dorsal root or cranial nerve sensory ganglia. Varicella is the primary infection with VZV, whereas zoster is a secondary infection due to reactivation of latent VZV sensory ganglia.

This test is used to determine a prior exposure to VZV and to aid in the determination of acute or convalescent stage of VZV infection. There are several situations in which providing a specific laboratory diagnosis of VZV infection is crucial. The first is in patients who are receiving immunosuppressive therapy or who have abnormalities in their cell-mediated immune responses and the second is in children receiving chemotherapy and radiotherapy for cancer. VZV infection in these cases may cause severe disease or be fatal. Providing a specific diagnosis of VZV infection in these cases may guide in the administration of anti-viral agents or other treatments.

SPECIMEN REQUIREMENTS:
2 ml serum from blood collected in red top tube without additive or in a serum separator tube with gel barrier. Separate the serum from the clot to avoid hemolysis: red top tube – transfer serum into plastic transport vial, gel tube – spin. Transport to the lab at room temperature. Store at room temperature for up to 8h, refrigerate for up to 48h. Store frozen at -20°C or below for up to 30 days. Avoid repeated freeze-thaw cycles.

METHOD: ELISA.

REFERENCES:
1. Gershon, A.A., LaRussa, P. and Steinberg, S. P. 1995. Varicella-Zoster Virus. In: Manual of Cinical Microbiology. Murray. P.R., Baron, E.J., Pfaller, M.A., Tenover, F.C. and Yolken, R.H. (eds). 6th Edition, ASM Press, Washington, DC. p.895-904.
2. Heath R. B. 1987. Varicella-Zoster. In: Pricinple and Practice of Clinical Virology. Zuckerman, A.J., Banatvala, J. E. and Pattison, J.R. (eds) John Wiley and Sons Ltd., New York, p51-73.
3. Arvin, A. M., Koropchak, C.M. and Wittek, A. E. 1983. Immunologic Evidence of Reinfection with Varicella-Zoster Virus. J. Infect. Dis. 148, No. 2: 200-205.
4. Bio-Rad Measles IgG EIA, www.bio-rad.com/webroot/web/pdf/cdg/literature/J-114A_VZV.pdf

RESULTS AND INTERPRETTION:

Index Value	Interpretation
< 0.9	NEGATIVE for VZV IgG, presumed NON-IMMUNE to VZV infection
≥ 0.9 and < 1.1	EQUIVOCAL. Another specimen should be tested 10 to 14 days later in parallel with the initial specimen. If the second specimen is Equivocal, the individual is negative for primary or recent VZV infection and Equivocal for antibody status. If the 2nd sample is positive, the individual can be considered to have a primary infection.
≥ 1.1	POSITIVE for VZV IgG, presumed IMMUNE to VZV infection

Turnaround time: One Week