

VIRUS IDENTIFICATION There are three major methods to diagnose viral infections: direct detection in the clinical specimen, specific antibody assay to detect viral antibodies in the serum, and viral culture. Direct detection methods include: (1) electron microscopy, which is used primarily by reference laboratories; (2) enzyme-linked immunosorbent assay (ELISA) for viruses such as respiratory syncytial virus (RSV), Hepatitis B surface antibody, and rotavirus; (3) latex agglutination for viruses such as rotavirus and RSV; (4) DNA probes for viruses such as cytomegalovirus (CMV); (5) polymerase chain reaction (PCR) for DNA detection for viruses such as HIV types 1 and 2; (6) optical immunoassay (OIIA), an antibody antigen-based test that produces a reflection change for detection of influenza viruses A and B from respiratory specimens; (7) light microscopy of cell scrapings from infected sites can detect Cowdry type A inclusion bodies from herpes simplex virus and varicella zoster virus; (8) Papanicolaou (Pap) smears for the effect of human papillomavirus on squamous cells; and (9) Negri bodies for the diagnosis of rabies. Complex antibody detection systems use a battery of viral antigens and often distinguish IgM (early) from IgG (late) antibodies. Viral infections cause an immunogenic response; therefore, antibody detection methods can be useful in the diagnosis of infection.