**Monoclonal Mouse**
**Anti-Human Immunodeficiency Virus, p24**
**Clone Kal-1**
**Code No. M0857**

For research use only. Not for use in diagnostic procedures.

**Recommended use**
Monoclonal Mouse Anti-Human Immunodeficiency Virus, p24, Clone Kal-1, is recommended for use in immunocytochemistry. The antibody can be used to study p24 expression in HIV-1-infected cells (1).

**Introduction**
The human immunodeficiency virus type 1 (HIV-1) was first identified in 1983 and shown in 1984 to be the causative agent of the acquired immunodeficiency syndrome, known as AIDS (2). HIV-1 is a retrovirus characterized by genomic RNA that is transcribed into DNA by reverse transcriptase upon entering the cytoplasm and decapsidation. The viral DNA inserts itself into the host chromosomes as a viral genome in a now infected CD4+ cell (3). At primary infection an initial burst of HIV-1 replication occurs, sometimes associated with symptoms ranging from mild glandular fever-like illness to an encephalopathy, although severe symptoms are rare (4). The viral load then decreases substantially in temporal association with the development of specific cellular immune responses. This plateau of plasma viremia is usually maintained for years as an asymptomatic infection, and this phase may persist 10 years or more mainly dependent on the cytotoxic T-lymphocyte (CTL) response (2-4). The progression of HIV infection is a result of a decline in immune competence manifesting as a decrease in CD4+ lymphocyte count simultaneously with an increase in replication of HIV-1 virus from sites where it has been latent. This is accompanied by the clinical manifestation of AIDS (4). p24 is a viral capsid protein of the HIV-1. It is located in the core of the virus, which is enclosed by a bilayered envelope with surface projections, which play an important role in the interaction with host proteins during HIV-1 adsorption, membrane fusion and entry (3).

**Reagent provided**
Monoclonal mouse antibody provided in liquid form as cell culture supernatant dialysed against 0.05 mol/L Tris/HCl, pH 7.2, and containing 15 mmol/L NaNO3.

**Immunogen**
Purified HIV type 1, disrupted with 0.5% NP40 (1).

**Specificity**
In Western blotting of purified disintegrated viruses, protein isolated from infected cells and commercially available strips, the antibody labels a band corresponding to the viral core protein p24 and a band corresponding to the precursor protein pr55, from which the viral structural proteins p17, p24, p7 and p9 are derived. No labelling is observed in analogue experiments using HIV-2, SIVmac or SIVsmm with the antibody (1). SDS-PAGE analysis of immunoprecipitates formed between35S-methionine labelled p24 and pr55 from lysates of HIV-1 infected cells or virus lysates (1). In immunocytochemistry, the antibody labels HIV infected H9 cells, a human T lymphoma cell line. No labelling is observed in the non-infected counterpart (1).

**Precautions**
1. The device is not intended for clinical use including diagnosis, prognosis, and monitoring of a disease state, and it must not be used in conjunction with patient records or treatment.
2. This product contains sodium azide (NaNO3), a chemical highly toxic in pure form. At product concentrations, though not classified as hazardous, sodium azide may react with lead and copper plumbing to form highly explosive build-ups of metal azides. Upon disposal, flush with large volumes of water to prevent metal azide build-up in plumbing.
3. As with any product derived from biological sources, proper handling procedures should be used.

**Storage**
Store at 2-8 °C. Do not use after expiration date stamped on vial. If unexpected staining is observed which cannot be explained by variations in laboratory procedures and a problem with the antibody is suspected, contact our Technical Services.

**Specimen preparation**
**Paraffin sections:** The antibody can be used for labelling paraffin-embedded tissue sections fixed in formalin. Pre-treatment of tissues with heat-induced epitope retrieval is required. Optimal results are obtained with DakoCytomation Target Retrieval Solution, code No. S1700 or DakoCytomation Target Retrieval Solution, pH 9, code No. S2368. Less optimal results are obtained with DakoCytomation Target Retrieval Solution, High pH, code No. S3308 or DakoCytomation Target Retrieval Solution, Citrate pH 6, code No S2369. Pre-treatment of tissues with Proteinase K was found inefficient. The tissue sections should not dry out during the treatment or during the following immunocytochemical staining procedure.

Frozen sections and cell preparations: The antibody can be used for labelling cell preparations (1).

**Staining procedure**
**Dilution:** Monoclonal Mouse Anti-Human Immunodeficiency Virus (HIV), p24, code No. M0857, may be used at a dilution range of 1:5-1:10 when applied on formalin-fixed, paraffin-embedded sections of human HIV-infected tonsil and using 20 minutes heat-induced epitope retrieval in DakoCytomation Target Retrieval Solution, code No. S1700, and 30 minutes incubation at room temperature with the primary antibody. Optimal conditions may vary depending on specimen and preparation method, and should be determined by each individual laboratory. The
recommended negative control is DakoCytomation Mouse IgG1, code No. X0931, diluted to the same mouse IgG concentration as the primary antibody.

**Visualization:** DAKO LSAB™+/HRP kit, code No. K0679, and DAKO EnVision™+/HRP kits, code Nos. K4004 and K4006, are recommended. For frozen sections and cell preparations, the DakoCytomation APAAP kit, code No. K0670, is a good alternative if endogenous peroxidase staining is a concern. Follow the procedure enclosed with the selected visualization kit.

**Automation:** The antibody is well-suited for immunocytochemical staining using automated platforms, such as the DakoCytomation Autostainer.

**Performance characteristics**

Cells labelled by the antibody display a cytoplasmic staining pattern, although pericytoplasmic extracellular labelling not clearly within an infected cell appearing as a network over lymphoid follicles has been encountered (1).

**References**