MONOCLONAL MOUSE ANTI-MITOTIC PROTEINS
(DAKO® MPM-2)
CODE NO.: M3514
LOT NO.: 124

IMMUNOGEN:
Mitotic human HeLa cell extract.\(^1\)

CLONE:
MPM-2\(^1\)

PRESENTATION:
DAKO® MPM-2 is a mouse monoclonal antibody supplied in liquid form as purified ascites in 0.05M Tris-HCl, pH 7.6, 15mM sodium azide and carrier protein.

**Protein Concentration:** 0.3 mg/mL (Lowry, excluding carrier protein)

**Mouse Ig Concentration:** 130 µg/mL (single radial immunodiffusion)

**Subclass:** IgG\(_1\) kappa

SPECIFICITY:
MPM-2 recognizes a distinct class of phosphoproteins ranging in molecular mass from 55 to 210 kDa, which are abundant in mitotic cells.\(^1\) The MPM-2 antigens are synthesized during interphase and phosphorylated during mitotic induction.\(^1\) These proteins share a phosphorylated epitope which is present in mitosis-specific antigens in a wide range of species.\(^1,4-6\) A consensus sequence containing phosphothreonine and common to MPM-2 reactive proteins has been identified.\(^2,3\) Some of the MPM-2 reactive proteins identified to date include cdc25, MAP-4, topoisomerase II alpha and an M phase-specific H1 kinase.\(^9-12\)

REACTIVITY:
MPM-2 antigens are strongly expressed within mitotic cells.\(^1,13,14\) In eukaryotes, MPM-2 phosphoproteins have been found in the cytoplasm of mitotic cells as well as being localized to centrosomes, kinetochores and midbodies of the microtubule organizing centers. Also labelled are fibers of the mitotic spindle.\(^13\) MPM-2 has been shown to stain the core of condensed mitotic chromatin but not interphase chromatin.\(^15\) MPM-2 antigens have also been found in interphase cells. The intensity of immunofluorescent staining in interphase cells is relatively weak compared to mitotic cell staining and limited to discrete areas of the nucleus.\(^17\) A dramatic increase in MPM-2 reactivity occurs at the G2/M transition as shown by immuno-fluorescence microscopy and flow cytometry.\(^13,16\)

STAINING PROCEDURE:
Paraffin Sections
DAKO® MPM-2 can be used on methacarn-fixed, paraffin-embedded tissue sections. The reactivity on Carnoy's or methacarn-fixed tissue is stronger and more consistent than that observed on formalin-fixed tissue.
A variety of staining techniques is suitable, including avidin-biotin methods, the three-stage immunoperoxidase procedure, the APAAP (alkaline phosphatase anti-alkaline phosphatase) and PAP (peroxidase anti-peroxidase) techniques.
DAKO® MPM-2 may be used at a dilution of 1:100 in the LSAB method determined on methacarn-fixed, paraffin-embedded tissue. These are guidelines only; optimal dilutions should be determined by the individual laboratory.

Cryostat Sections and Cell Smears

DAKO® MPM-2 can also be used to label cryostat sections or cell smears.

**STORAGE:**

Store at 2-8°C or -20°C. Avoid repeated freeze-thaw cycles.

**REFERENCES:**

11. Taagepera S, et al. DNA topoisomerase II" is the major chromosome protein recognized by the mitotic phosphoprotein antibody MPM-2. Proc Natl Acad Sci USA 1993; 90:8407

For In Vitro Diagnostic Use.