MCL-1 Antibody

Cat. No. CP10166

Applications:	**WB, IP, ICC, IHC**
Detected MW:	**37 kDa**
Species & Reactivity:	**Human, Mouse**
Isotype:	**Mouse IgG1**

BACKGROUND

MCL-1 (Myeloid cell leukemia-1) was identified in a screen for differentiation-induced genes activated in the human monocytic leukemia cell line, ML-1. The MCL-1 protein is a member of the BCL-2 family displaying all four of the BCL-2 homology domains (BH1–4) and has been localized to intracellular membranes, particularly the mitochondrial membrane. Unlike other members of this protein family, Mcl-1 has an extended N-terminal domain which is rich in PEST sequences. The PEST sequence is probably responsible for the short half-life of this protein MCL-1 is widely expressed in human and murine tissues and cell lines as well as in a wide variety of human tumors. MCL-1 has been shown to delay cell death in selected cell lines, but in comparison, is not as potent as BCL-2, and has no effect in other systems in which BCL-2 proves protective. Transgenic mice that over-expressed *Mcl-1* displayed improved hematopoietic cell survival and enhanced outgrowth of myeloid cell lines. MCL-1 knockout mice data indicate that *MCL-1* is essential for preimplantation development and implantation.[1] Thus, MCL-1 functions to inhibit apoptosis in selected cell types and It could possess other nonapoptotic functions. The anti-apopotic effects of MCL-1 can be regulated by different signaling pathways. MCL-1 was phosphorylated by GSK-3 at a conserved GSK-3 phosphorylation site (S159). S159 phosphorylation of MCL-1 was induced by IL-3 withdrawal or PI3K inhibition and prevented by AKT or inhibition of GSK-3, and it led to increased ubiquitinylation and degradation of MCL-1. Thus, control of MCL-1 stability by GSK-3 is an important mechanism for the regulation of apoptosis by growth factors, PI3K, and AKT.[2]

MCL-1 expression has been noted to be rapidly up-regulated in response to certain cytotoxic and differentiation stimuli, but the increased expression is often transient. MCL-1 expression was activated by GM-CSF and IL-3 stimulation. Stimulation of *mcl-1* gene transcription was mediated through both the PI3-K/Akt-dependent and -independent pathways. And CREB was one component of the transcription factor complex activated by the PI3-K/Akt-dependent pathway and played a role in IL-3 stimulation of *mcl-1* gene expression.[3] In addition, it was demonstrated that t the JAK / STAT pathway but not of the Ras / mitogen-activated protein (MAP) kinase pathway was involved in IL-6-induced Mcl-1 up-regulation.[4]

References:

1. Rinkenberge, J. et al: Gene Dev. 14:23-27, 2000
2. Maurer, U. et al: Mol. Cell 21:749-60, 2006
3. Wang, J.-M. et al: Mol. Cell. Biol. 19:6195-206, 1999
4. Puthier, D. et al: Eur. J. Immunol. 29:3945-50, 1999

TECHNICAL INFORMATION

Source:
MCL-1 Antibody is a mouse monoclonal antibody raised against purified recombinant human MCL-1 fragments expressed in *E. coli*.

Specificity and Sensitivity:
This antibody detects endogenous MCL-1 proteins without cross-reactivity with other family members.

Storage Buffer: PBS and 30% glycerol

Storage:
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	1:50
IHC	1:200
ICC	1:200
FACS	n/d

**Optimal dilutions must be determined by end user.*

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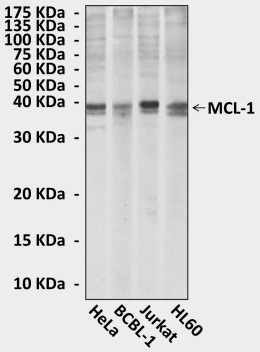
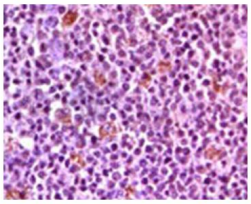
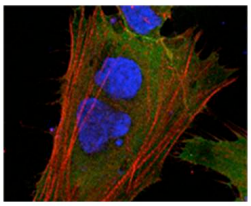
QUALITY CONTROL DATA







Top: Western Blot detection of MCL-1 proteins in various cell lysates using MCL-1 Antibody. **Middle:** This antibody stains paraffin-embedded human lymph node tissue in immunohistochemical analysis. **Bottom:** It also stains HepG2 cells in confocal immunofluorescent testing (MCL-1 antibody: Green; Actin filament: Red; DRAQ5 DNA dye: Blue).