SirT1 (D1D7) Rabbit mAb

**Applications Key:** W, IF-IC

**Species Cross-Reactivity**

<table>
<thead>
<tr>
<th>Applications</th>
<th>Species Cross-Reactivity*</th>
<th>Molecular Wt.</th>
<th>Isotype</th>
<th><strong>Anti-rabbit secondary antibodies must be used to detect this antibody.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>W, IF-IC</td>
<td>Endogenous</td>
<td>120 kDa</td>
<td>Rabbit IgG**</td>
<td>*Species cross-reactivity is determined by western blot.</td>
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<tr>
<td></td>
<td>H, M, R, Mk, (C, B, Pg, Hr)</td>
<td></td>
<td></td>
<td>**Anti-rabbit secondary antibodies must be used to detect this antibody.</td>
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</tbody>
</table>

**Background:**
The Silent Information Regulator (SIR2) family of genes is a highly conserved group of genes that encode nicotinamide adenine dinucleotide (NAD)-dependent protein deacetylases, also known as class III histone deacetylases. The first discovered and best characterized of these genes is Saccharomyces cerevisiae SIR2, which is involved in silencing of mating type loci, telomere maintenance, DNA damage response, and cell aging (1). SirT1, the mammalian ortholog of Sir2, is a nuclear protein implicated in the regulation of many cellular processes, including apoptosis, cellular senescence, endocrine signaling, glucose homeostasis, aging, and longevity. Targets of SirT1 include acetylated p53 (2,3), p300 (4), Ku70 (5), forkhead (FoxO) transcription factors (5,6), PPARγ (7), and PGC-1α (PGC-1α) protein (8). Deacetylation of PPARγ and PGC-1α regulates the gluconeogenic/glycolytic pathways in the liver and fat mobilization in white adipocytes in response to fasting (7,8). SirT1 deacetylation activity is inhibited by nicotinamide and activated by resveratrol. In addition, SirT1 activity may be regulated by phosphorylation, since it is phosphorylated on Ser27 and Ser47 in vivo; however, the function of these phosphorylation sites has not yet been determined (9).

**Specificity/Sensitivity:** SirT1 (D1D7) Rabbit mAb recognizes endogenous levels of total SirT1 protein. This antibody does not cross-react with other sirtuin proteins.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Phe297 of human SirT1 protein.

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

**Recommended Antibody Dilutions:**

- Western blotting: 1:1000
- Immunofluorescence (IF-IC): 1:400

**Recommended Companions:**

- β-Actin (D6A8) Rabbit mAb (upper)
- Dylight 549 Conjugated Goat Anti-Rabbit IgG (H+L) (upper)

**Support:**

- Orders: 877-616-CELL (2355)
- Support: 877-678-TECH (8324)
- Web: www.cellsignal.com

**Background References:**


**IMPORTANT:** For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.
Confocal immunofluorescent analysis of HeLa (positive; left), WT MEF (positive; middle), and SirT1 KO MEF (right) cells using SirT1 (D1D7) Rabbit mAb (green). Actin filaments were labeled with DyLight™ 554 Phalloidin #13054 (red). WT and KO MEF were kindly provided by Wenyi Wei, Harvard Medical School.