**DRP1 (D6C7) Rabbit mAb**

**For Research Use Only. Not For Use In Diagnostic Procedures.**

**Background:** Dynamin-related protein 1 (DRP1) is a member of the dynamin superfamily of GTPases. Members of this family have diverse cellular functions including vesicle scission, organelle fission, viral resistance, and intracellular trafficking (reviewed in 1). DRP1 affects mitochondrial morphology and is important in mitochondrial and peroxisomal fission in mammalian cells (2-5). The yeast ortholog of DRP1 clusters into a spiral-shaped structure on the mitochondrial membrane at the site of fission (reviewed in 6), and this structure is likely conserved in mammalian cells (3). The division of the mitochondria, which is required for apoptosis, as well as normal cell growth and development is controlled, in part, by the phosphorylation of DRP1 at Ser616 by Cdk1/cyclin B and at Ser637 by protein kinase A (PKA) (reviewed in 6). When phosphorylated at Ser616, DRP1 stimulates mitochondrial fission during mitosis. Conversely, fission is inhibited when DRP1 is phosphorylated at Ser637 (reviewed in 6). Dephosphorylation at Ser637 by calcineurin reverses this inhibition (7). In addition to phosphorylation, sumoylation of DRP1 is also an enhancer of mitochondrial fission (8). Balancing fission and fusion events is essential for proper mitochondrial function. Research studies have demonstrated mitochondrial defects in a variety of neurodegenerative diseases including Alzheimer's disease, Parkinson's disease, and Huntington's disease (reviewed in 6). Dephosphorylation at Ser637 by calcineurin reverses this inhibition (7). In addition to phosphorylation, sumoylation of DRP1 is also an enhancer of mitochondrial fission (8). Balancing fission and fusion events is essential for proper mitochondrial function. Research studies have demonstrated mitochondrial defects in a variety of neurodegenerative diseases including Alzheimer's disease, Parkinson's disease, and Huntington's disease (reviewed in 6).

**Specificity/Sensitivity:** DRP1 (D6C7) Rabbit mAb recognizes endogenous levels of total DRP1 protein.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human DRP1 protein.

**Background References:**

**Recommended Antibody Dilutions:**
- Western blotting: 1:1000
- Immunoprecipitation: 1:100
- Immunofluorescence (IF-IC): 1:50
- Immunoperoxidase: 1:100

**Applications Key:**
- W—Western
- IP—Immunoprecipitation
- HC—Immunohistochemistry
- ChIP—Chromatin Immunoprecipitation
- IF—Immunofluorescence
- F—Flow cytometry
- E-P—ELISA-Peptide

**Species Cross-Reactivity Key:**
- H—human
- M—mouse
- R—rat
- Hm—hamster
- Mm—monkey
- Mi—min mouse
- C—chicken
- Dm—D. melanogaster
- X—Xenopus
- Z—zebrafish
- B—bovine
- Dg—dog
- Pg—pig
- Sc—S. cerevisiae
- Ce—C. elegans
- Mt—mole
- All—all species expected

**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.

**Species cross-reactivity is determined by western blot.**

**Anti-rabbit secondary antibodies must be used to detect this antibody.**

**Recommended Antibody Dilutions:**
- Western blotting: 1:1000
- Immunoprecipitation: 1:100
- Immunofluorescence (IF-IC): 1:50

For application specific protocols please see the web page for this product at www.cellsignal.com. Please visit www.cellsignal.com for a complete listing of recommended companion products.

**Confocal immunofluorescent analysis of ACHN cells using DRP1 (D6C7) Rabbit mAb (green). Actin filaments were labeled with DyLight™ 554 Phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).**

**Western blot analysis of extracts from various cell lines using DRP1 (D6C7) Rabbit mAb.**

**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.