

Store at
-20°C

#83163

Microglia Cross Module Antibody Sampler Kit



Support: +1-978-867-2388 (U.S.)
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New 06/19

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

| Products Included | Product # | Quantity | Mol. Wt. | Isotype/Source |
|--|-----------|----------|-----------------------------------|----------------|
| ASC/TMS1 (D2W8U) Rabbit mAb (Mouse Specific) | 67824 | 20 µl | 22 kDa | Rabbit IgG |
| HS1 (D5A9) XP® Rabbit mAb (Rodent Specific) | 3892 | 20 µl | 80 kDa | Rabbit IgG |
| Ki-67 (D3B5) Rabbit mAb | 9129 | 20 µl | 359 kDa | Rabbit IgG |
| Axl (C89E7) Rabbit mAb | 8661 | 20 µl | 138 kDa | Rabbit IgG |
| Hydroxy-HIF-1α (Pro564) (D43B5) XP® Rabbit mAb | 3434 | 20 µl | 120 kDa | Rabbit IgG |
| Stat2 (D9J7L) Rabbit mAb | 72604 | 20 µl | 97, 113 kDa | Rabbit IgG |
| Phospho-Stat2 (Tyr690) (D3P2P) Rabbit mAb | 88410 | 20 µl | 97, 113 kDa | Rabbit IgG |
| Lamin A/C (4C11) Mouse mAb | 4777 | 20 µl | 74 (Lamin A), 63 (Lamin C) kDa | Mouse IgG2a |
| IQGAP1 (D8K4X) XP® Rabbit mAb | 20648 | 20 µl | 195 kDa | Rabbit IgG |
| Anti-rabbit IgG, HRP-linked Antibody | 7074 | 100 µl | | Goat |

See www.cellsignal.com for individual component applications, species cross-reactivity, dilutions and additional application protocols.

Description: The Microglia Cross Module Antibody Sampler Kit provides an economical means of detecting proteins identified as markers of microglial activity corresponding to proliferation, neurodegeneration, interferon and LPS-relation by western blot and/or immunofluorescence.

Background: Distinct microglial activation states have been identified using RNA-seq data from a vast array of neurological disease and aging models. These activation states have been categorized into modules corresponding to proliferation, neurodegeneration, interferon-relation, LPS-relation, and many others (1). Previous work identifying markers of specific brain cell types using RNA-seq has shown HS1 and ASC/TMS1 to be useful and specific tools to study microglia (2). HS1 is a protein kinase substrate that is expressed only in tissues and cells of hematopoietic origin (3) and ASC/TMS1 has been found to be a critical component of inflammatory signaling where it associates with and activates caspase-1 in response to pro-inflammatory signals (4).

Ki-67 is a nuclear nonhistone protein (5) universally expressed among proliferating cells and absent in quiescent cells (6). Axl is a receptor tyrosine kinase that binds Gas6, stimulating regulatory effects on microglial phagocytic response to inflammatory stimuli (7). Hypoxia inducible factor-1 (HIF-1α) is a transcription factor responsible for adaptation to low oxygen environments whose downstream effects have been shown in a number of neurodegenerative diseases. Under normoxic conditions, HIF-1α is proline hydroxylated leading to ubiquitin mediated degradation (8). Stat2 is critical to the transcriptional responses induced by type I interferons, IFN-alpha/beta (9,10). In response to IFN-alpha/beta, Stat2 is activated by phosphorylation at site Tyr690 through associations with receptor-bound Jak kinases (11). Lamins are nuclear membrane structural

components important for maintaining normal cell functions. Lamin A/C is cleaved by caspase-6 and serves as a marker for caspase-6 activation. The cleavage of lamins results in nuclear dysregulation and cell death (12,13). IQGAP1 is ubiquitously expressed and has been found to interact with APC (14) and the CLIP170 complex in response to small GTPases, promoting cell polarization and migration (15).

Specificity/Sensitivity: Each antibody in the Microglia Cross Module Antibody Sampler Kit detects endogenous levels of its target protein. Hydroxy-HIF-1α (Pro564) (D43B5) XP® Rabbit mAb detects endogenous levels of HIF-1α only when hydroxylated at Pro564. This antibody may cross-react with other overexpressed proline hydroxylated proteins. Phospho-Stat2 (Tyr690) (D3P2P) Rabbit mAb recognizes endogenous levels of Stat2 protein only when phosphorylated at Tyr690. Axl (C89E7) Rabbit mAb does not cross-react with Tyro3. HS1 (D5A9) XP® Rabbit mAb (Rodent Specific) does not recognize human HS1 protein. HS1 has a calculated size of 54 kDa, but has an apparent molecular weight of 80 kDa on SDS-PAGE gels. Lamin A/C (4C11) Mouse mAb detects endogenous levels of lamin A and lamin C proteins. It also reacts with the larger fragments of lamin A (50 kDa) and lamin C (41 kDa) produced by caspase cleavage during apoptosis. This antibody does not cross-react with lamins B1 and B2.

Source/Purification: Monoclonal antibodies are produced by immunizing animals with synthetic peptides corresponding to residues surrounding Leu310 of mouse HS1, Pro564 of human HIF-1α, Leu706 of human Stat2, Tyr690 of human Stat2, the amino terminus of human Ki-67 and IQGAP1, and recombinant fragment of human Axl, human lamin A, and mouse ASC/TMS1.

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.

Please visit www.cellsignal.com for validation data and a complete listing of recommended companion products.

Background References:

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- (3) Kitamura, D. et al. (1995) *Biochem Biophys Res Commun* 208, 1137-46.
- (4) Srinivasula, S.M. et al. (2002) *J Biol Chem* 277, 21119-22.
- (5) Gerdes, J. et al. (1983) *Int J Cancer* 31, 13-20.
- (6) Weigel, M.T. and Dowsett, M. (2010) *Endocr Relat Cancer* 17, R245-62.
- (7) Grommes, C. et al. (2008) *J Neuroimmune Pharmacol* 3, 130-40.
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- (10) Ihle, J.N. (2001) *Curr Opin Cell Biol* 13, 211-7.
- (11) Improta, T. et al. (1994) *Proc Natl Acad Sci U S A* 91, 4776-80.
- (12) Oberhammer, F.A. et al. (1994) *J Cell Biol* 126, 827-37.
- (13) Rao, L. et al. (1996) *J Cell Biol* 135, 1441-55.
- (14) Watanabe, T. et al. (2004) *Dev Cell* 7, 871-83.
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Applications: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected **Species enclosed in parentheses are predicted to react based on 100% homology.**