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#93195

Microglia Neurodegeneration Module Antibody Sampler Kit

Cell Signaling TECHNOLOGY®

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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
Cathepsin B (D1C7Y) XP® Rabbit mAb	31718	20 µl	24, 27, 44 kDa	Rabbit IgG
HIF-1α (D1S7W) XP® Rabbit mAb	36169	20 µl	120 kDa	Rabbit IgG
Hydroxy-HIF-1α (Pro564) (D43B5) XP® Rabbit mAb	3434	20 µl	120 kDa	Rabbit IgG
Galectin-3/LGALS3 (D4I2R) XP® Rabbit mAb	87985	20 µl	28 kDa	Rabbit IgG
Axl (C89E7) Rabbit mAb	8661	20 µl	138 kDa	Rabbit IgG
CD68 (D4B9C) XP® Rabbit mAb	76437	20 µl		Rabbit IgG
CD68 MultiMab™ Rabbit mAb mix	86985	20 µl	70-80, 130-140 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 Neurodegeneration Module Antibody Sampler Kit provides an economical means of detecting proteins identified as markers of microglial activity during neurodegeneration 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).

CD68 is a common marker for macrophage lineage cells; with expression found in the lysosome making it a useful marker for activated phagocytic microglia (5). Galectin-3 has been shown to regulate inflammatory response in neurodegenerative diseases, released by microglia in response to inflammatory stimuli (6). Cathepsin B is a widely expressed cysteine peptidase located in the lysosome as well as processed and secreted, playing a role in microglial-mediated neuronal death (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, HIF1-α is proline hydroxylated leading to ubiquitin mediated degradation (8). Axl is a receptor tyrosine kinase that binds Gas6, stimulating regulatory effects on microglial phagocytic response to inflammatory stimuli (9).

Specificity/Sensitivity: Each antibody in the Microglia Neurodegeneration Module Antibody Sampler Kit detects endogenous levels of its target protein. 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. Cathepsin B (D1C7Y) XP® Rabbit mAb recognizes endogenous levels of total cathepsin B protein and detects the heavy chain subunit of cathepsin B. Hydroxy-HIF-1α (Pro564) (D43B5) XP® Rabbit mAb detects endogenous levels of HIF-1α only when hydroxylated at Pro564 and may cross-react with other overexpressed proline hydroxylated proteins. Axl (C89E7) Rabbit mAb does not cross-react with Tyro3.

Source/Purification: Monoclonal antibodies are produced by immunizing animals with synthetic peptides corresponding to residues surrounding Leu310 of mouse HS1, Leu478 of human HIF-1α, the amino terminus of human Galectin-3/LGALS3, a hydroxypeptide surrounding Pro564 of human HIF-1α, and recombinant proteins specific to mouse ASC/TMS1, human Axl, human CD68, and the heavy chain subunit of human cathepsin B protein.

MultiMab™ rabbit monoclonal mix antibodies are prepared by combining individual rabbit monoclonal clones in optimized ratios for the approved applications. This product is optimized to detect CD68 as a monomer and a dimer by western blot and was produced by immunizing animals with recombinant human CD68 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.*

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

Background References:

(1) Friedman, B.A. et al. (2018) *Cell Rep* 22, 832-47.

(2) Zhang, Y. et al. (2014) *J Neurosci* 34, 11929-47.

(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) Hopperton, K.E. et al. (2018) *Mol Psychiatry* 23, 177-98.

(6) Yip, P.K. et al. (2017) *Sci Rep* 7, 41689.

(7) Gan, L. et al. (2004) *J Biol Chem* 279, 5565-72.

(8) Zhang, Z. et al. (2011) *Curr Med Chem* 18, 4335-43.

(9) Grommes, C. et al. (2008) *J Neuroimmune Pharmacol* 3, 130-40.

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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.