

Microglia Neurodegeneration Module Antibody Sampler Kit



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1 Kit (8 x 20 microliters)

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For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
ASC/TMS1 (D2W8U) Rabbit mAb	67824	20 µl	22 kDa	Rabbit IgG
HS1 (D5A9) XP® Rabbit mAb	3892	20 µl	80 kDa	Rabbit IgG
Cathepsin B (D1C7Y) XP® Rabbit mAb	31718	20 µl	44, 27, 24 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

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

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.

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.

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, HIF-1α 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).

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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