Store at -20°C

#49938

Microglia Proliferation Module Antibody Sampler Kit

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New 05/19

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

Products Included	Product #	Quantity	Mol. Wt.	Isotype/Source
HS1 (D5A9) XP® Rabbit mAb (Rodent Specific)	3892	20 µl	80 kDa	Rabbit IgG
ASC/TMS1 (D2W8U) Rabbit mAb (Mouse Specific)	67824	20 µl	22 kDa	Rabbit IgG
Ki-67 (D3B5) Rabbit mAb	9129	20 µl	359 kDa	Rabbit IgG
MCM2 (D7G11) XP® Rabbit mAb	3619	20 µl	125 kDa	Rabbit IgG
Survivin (71G4B7) Rabbit mAb	2808	20 µl	16 kDa	Rabbit IgG
HP1α/β (C7F11) Rabbit mAb	2623	20 µl	25 kDa	Rabbit IgG
P-Aurora A/B/C (Thr288/232/198)(D13A11) XP® Rabbit mAb	2914	20 µl	35, 40, 48 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 Proliferation Module Antibody Sampler Kit provides an economical means of detecting proteins identified as markers of microglial proliferation 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). Minichromosome maintenance protein 2 (MCM2) is a nuclear protein that plays a role in DNA replication and cell division (7) and is commonly used as a marker for cell proliferation, including brain tissue (8). Survivin binds and inhibits caspase-3, controlling the checkpoint in the G2/M-phase of the cell cycle by inhibiting apoptosis and promoting cell division (9). Aurora A, B, and C are a family of highly conserved serine/threonine kinases that regulate chromosomal alignment and segregation during mitosis and meiosis. Their activity requires autophosphorylation of a threonine within their kinase domain at site Thr288 of Aurora A, Thr232 of Aurora B, and Thr198 of Aurora C (10). Heterochromatin protein 1 (HP1) α and β are heterochromatic adaptor molecules involved in both gene silencing and higher order chromatin structure (11).

Specificity/Sensitivity: Each antibody in the Microglia Proliferation 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. Phospho-Aurora A (Thr288)/Aurora B (Thr232)/Aurora C (Thr198) (D13A11) XP® Rabbit mAb detects endogenous levels of Aurora A/B/C only when phosphorylated at either Thr288, Thr232, or Thr198 respectively. HP1α/β (C7F11) Rabbit mAb does not cross-react with HP1 γ proteins.

Source/Purification: Monoclonal antibodies are produced by immunizing animals with synthetic peptides corresponding to residues surrounding Leu310 of mouse HS1, Cys60 of human Survivin, Thr232 of human Aurora B, the carboxy terminus of human HP1α, the amino terminus of human Ki-67 and MCM2, and recombinant mouse ASC/TMSI 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) 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) Mincheva, A. et al. (1994) *Cytogenet Cell Genet* 65, 276-7.

(8) Doorn, K.J. et al. (2014) *Neural Plast* 2014, 959154.

(9) Li, F. et al. (1999) *Nat Cell Biol* 1, 461-6.

(10) Goldenson, B. and Crispino, J.D. (2015) *Oncogene* 34, 537-45.

(11) Maison, C. and Almouzni, G. (2004) *Nat Rev Mol Cell Biol* 5, 296-304.

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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.