Revision 1

Store at -20C

#19171

Microglia Interferon-Related Module Antibody Sampler Kit

1 Kit (6 x 20 microliters)

Cell Signaling TECHNOLOGY®

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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
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
Akt3 (E1Z3W) Rabbit mAb	14982	20 µl	60 kDa	Rabbit IgG
Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb	4060	20 µl	60 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 Interferon-Related Module Antibody Sampler Kit provides an economical means of detecting proteins identified as markers of interferon-related microglial activity 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).

Stat2 is critical to the transcriptional responses induced by type I interferons, IFN-alpha/beta (5,6). In response to IFN-alpha/beta, Stat2 is activated by phosphorylation at site Tyr690 through associations with receptor-bound Jak kinases (7). Akt is a protein kinase that plays a critical role in controlling survival and apoptosis. Akt is activated by various growth and survival factors to function in a wortmannin-sensitive pathway involving PI3 kinase (8-10) and its activity is shown to be essential for up-regulation of key IFN inducible proteins (11). Akt is activated by phospholipid binding and activation loop phosphorylation at Thr308 by PDK1 (12) and by phosphorylation within the carboxy terminus at Ser473. The previously elusive PDK2 responsible for phosphorylation of Akt at Ser473 has been identified as mammalian target of rapamycin (mTOR) in a rapamycin-insensitive complex with rictor and Sin1 (13,14).

Background References

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