Recombinant Mouse Ephrin-A5 Fc Chimera

Catalog Number: 7396-EA

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived

Mouse Ephrin-A5 (Met1-Asn203) Accession # NP_997537	IEGRMDP	Mouse IgG_{2A} (Glu98-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis	No results obtained: Gln21 predicted, sequencing might be blocked
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	48.4 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	57-60 kDa, reducing conditions
Activity	Measured by its ability to inhibit proliferation of PC-3 human prostate cancer cells. The ED_{50} for this effect is 2.5-10 ng/mL.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Ephrin-A5, also known as AL-1, RAGS, and LERK-7, is an approximately 25 kDa member of the Ephrin-A family of GPI-anchored ligands that bind and induce the tyrosine autophosphorylation of Eph receptors. Ephrin-A ligands are structurally related to the extracellular domains of the transmembrane Ephrin-B ligands. Eph-Ephrin interactions are widely involved in the regulation of cell migration, tissue morphogenesis, and cancer progression (1, 2). Ephrin-A5 preferentially interacts with receptors in the EphA family but also with EphB2 (3). Mature mouse Ephrin-A5 shares 98.9% and 99.5% aa sequence identity with human and rat Ephrin-A5 (4). Alternate splicing of mouse Ephrin-A5 generates a short isoform that lacks 27 amino acids in the juxtamembrane region. The short isoform retains the ability to bind EphA3 and inhibit neurite extension (5). Ephrin-A5 is expressed in multiple tissues during development, particularly in the brain (6, 7). It can exert repulsive or attractive effects on migrating neurons in the developing brain and motor column of the spinal cord (7-11). Ephrin-A5 repels migrating axons by inducing growth cone collapse and neurite retraction and by inhibiting the neurotrophic effects of NGF and BDNF (3, 12, 13). It interacts *in cis* with EphA3 on retinal axon growth cones which reduces axonal sensitivity to Ephrin-A5 *in trans* (14). In the adult, Ephrin-A5 is expressed on hippocampal neurons and astrocytes and induces the development of hippocampal synapses (10, 15, 16). It supports the proliferation of neural progenitors and the survival of newly differentiated neurons (15). Ephrin-A5 functions as a tumor suppressor and its normal function in inhibiting EGFR signaling is compromised by its down-regulation in glioma (17). Ephrin A5 is also down-regulated in prostate cancer (18). Ephrin-A5 is expressed by muscle precursor cells and interacts with EphA4 to restrict their migration to the correct locations during forelimb morphogenesis (19).

References:

1. Miao, H. and B. Wang (2009) Int. J. Biochem. Cell Biol. **41**:762.
2. Pasquale, E.B. (2010) Nat. Rev. Cancer **10**:165.
3. Himanen, J.-P. *et al.* (2004) Nat. Neurosci. **7**:501.
4. Flenniken, A.M. *et al.* (1996) Dev. Biol. **179**:382.
5. Lai, K.-O. *et al.* (1999) FEBS Lett. **458**:265.
6. Deschamps, C. *et al.* (2010) BMC Neurosci. **11**:105.
7. Cooper, M.A. *et al.* (2009) Dev. Neurobiol. **69**:36.
8. Frisen, J. *et al.* (1998) Neuron **20**:235.
9. Zimmer, G. *et al.* (2008) Eur. J. Neurosci. **28**:62.
10. Otal, R. *et al.* (2006) Neuroscience **141**:109.
11. Eberhart, J. *et al.* (2004) J. Neurosci. **24**:1070.
12. Munoz, L.M. *et al.* (2005) Dev. Biol. **283**:397.
13. Meier, C. *et al.* (2011) PLoS ONE **6**:e26089.
14. Carvalho, R.F. *et al.* (2006) Nat. Neurosci. **9**:322.
15. Hara, Y. *et al.* (2010) Stem Cells **28**:974.
16. Akaneya, Y. *et al.* (2010) PLoS ONE **5**:e12486.
17. Li, J.-J. *et al.* (2009) Oncogene **28**:1759.
18. Gustavsson, H. *et al.* (2008) Prostate **68**:161.
19. Swartz, M.E. *et al.* (2001) Development **128**:4669.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449