

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Persephin in direct ELISAs and Western blots. In Western blots, approximately 10% cross-reactivity with recombinant human Persephin is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant mouse Persephin Ala61-Gly156 Accession # O70300.1
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the [Technical Information](#) section on our website.

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Mouse Persephin (Catalog # 2479-PS)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Persephin is a secreted protein belonging to the glial cell line-derived neurotrophic factor (GDNF) family of the TGF-β superfamily. It shares 38-46% amino acid identity with family members GDNF, neurturin and artemin. Persephin is expressed at very low levels in most tissues (1). The 10-12 kDa mature protein contains several cysteines that are conserved among family members. It circulates as an unglycosylated disulfide-linked homodimer. Mature mouse persephin shares 94%, 81%, 79% and 76% amino acid sequence identity with rat, human, bovine and canine persephin, respectively. Like other GDNF family members, persephin acts through engagement of a glycosylphosphatidylinositol (GPI)-linked GDNF receptor family (GRF) member that signals through the receptor tyrosine kinase RET. Persephin is reported to promote both the survival and growth of central dopaminergic and motor neurons, and kidney development (1). These effects are correlated with the expression patterns of its specific receptor, GFRα4, and RET (2, 3). Functional GFRα4 isoforms are found only in thyroid, adrenal medulla and portions of the central nervous system and include GPI-linked, transmembrane and soluble forms (3, 4). *In vitro*, persephin promotes survival only in neurons which coexpress GPI-linked GFRα4 with RET (2, 5). This effect does not show a strong correlation to the recruitment of RET in lipid rafts seen with other GDNF family members (6). Disruption of the persephin gene results in mice that are morphologically normal but have more damage and less effective repair after a central nervous system insult simulating a stroke. Microinjection of persephin prior to treatment protects against damage in both wild-type and mutant mouse brains, but surprisingly, high doses of persephin are detrimental (7).

References:

1. Milbrandt, J. *et al.* (1998) *Neuron* **20**:245.
2. Lindahl, M. *et al.* (2001) *J. Biol. Chem.* **276**:9344.
3. Lindahl, M. *et al.* (2000) *Mol. Cell. Neurosci.* **15**:522.
4. Akerud, P. *et al.* (2002) *Mol. Cell. Neurosci.* **21**:205.
5. Enokido, Y. *et al.* (1998) *Curr. Biol.* **8**:1019.
6. Yang, J. *et al.* (2004) *FEBS Lett.* **569**:267.
7. Tomac, A. C. *et al.* (2002) *Proc. Natl. Acad. Sci. USA* **99**:9521.