

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Persephin in Western blots. In Western blots, no cross-reactivity with recombinant human (rh) AgRP, rhArtemin, rhβIG-H3, rhCrip1, recombinant drosophila Decapentaplegic, rhGDNF, rhLAP, rhLatent TGF-β1, rhLefty-A, rhMIS, rhNeurtu
Source	Monoclonal Mouse IgG _{2B} Clone # 275508
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human Persephin Ala61-Gly156 Accession # O60542
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide

*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.

Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

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 (aa) identity with family members GDNF, neurturin and artemin. Persephin is expressed at very low levels in most tissues (1). The 156 aa, 10-12 kDa mature protein contains a signal sequence, a pro-domain and a 96 aa mature sequence with several cysteines that are conserved among family members. It circulates as an unglycosylated disulfide-linked homodimer. Mature human Persephin shares 81% and 80%, 89%, and 87% amino acid sequence identity with mouse, rat, bovine and canine Persephin, respectively. Like other GDNF family members, Persephin acts through engagement of GFRα4, 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 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 central nervous system insult that stimulates 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).

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