

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Plexin A4 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human Plexin A1, recombinant mouse (rm) Plexin A1 or rmPlexin A2 is observed.
Source	Monoclonal Mouse IgG ₁ Clone # 707206
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human Plexin A4 Thr24-Pro1237 Accession # Q9HCM2
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *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.

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 µg/10 ⁶ cells	Human peripheral blood lymphocytes

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. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Plexin A4 is a 220-230 kDa member of the plexin A subfamily, plexin family of proteins (1). It is found on sensory, autonomic and motor neurons and oligodendrocytes, plus T cells and dendritic cells (1-8). Mature human Plexin A4 is an 1871 amino acid (aa) type I transmembrane glycoprotein with a 23 aa signal sequence, a 1214 aa extracellular domain (ECD), and a 636 aa cytoplasmic region. The ECD contains one Sema-domain (aa 51-482), three PSI domains (aa 509-856) and four IPT regions (aa 858-1230) that contain a phosphoserine at aa 946 (1). Of three isoform variants, one shows a 65 aa substitution for aa 458-1894, a second shows an 80 aa substitution for aa 1292-1894, and a third shows the just mentioned 80 aa substitution coupled to a 14 aa substitution for aa 1-535 (9). The human Plexin A4 ECD shares 97% aa identity with mouse, equine, canine, and bovine Plexin A4. Full-length Plexin A4 also shares 67% aa identity with the most related family member, Plexin A2. Plexin A4 regulates cell migration, activation and axon guidance via repulsion (1-5). It serves as a receptor for transmembrane semaphorins, Sema6A and 6B, and as a coreceptor with neuropilin-1 for the secreted semaphorin, Sema3A (1-8). During development, it plays a role in nerve migration and midline crossing and down-regulates dendrite formation (2-8). It is often co-expressed with Plexin A3, which can also engage class 6 semaphorins but prefers Sema3F/neuropilin-2 to Sema3A/neuropilin-1 (3, 8). Thus, Plexins A3 and A4 are redundant in some functions, but unique in others. In T cells, Plexin A4 engages Sema3A and negatively regulates TCR signals (6).

References:

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2. Suto, F. *et al.* (2005) *J. Neurosci.* **25**:3628.
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4. Waimey, K.E. *et al.* (2008) *Dev. Biol.* **315**:448.
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6. Yamamoto, M. *et al.* (2008) *Int. Immunol.* **20**:413.
7. Okada, A. *et al.* (2007) *Biochem. Biophys. Res. Commun.* **352**:158.
8. Yaron, A. *et al.* (2005) *Neuron* **45**:513.
9. Protein Accession # NP_861440, EAW83796, EAL24077.

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