Human Cadherin-12
Alexa Fluor® 594-conjugated Antibody

Monoclonal Rat IgG_1 Clone # 343621

Catalog Number: FAB2240T

100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Cadherin-12 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human (rh) Cadherin-8, -11, -13, -17, rhE-Cadherin, rhP-Cadherin, rhR-Cadherin, or rhVR-Cadherin is observed.
Source	Monoclonal Rat IgG_1 Clone # 343621
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant human Cadherin-12 Met1-Pro609 Accession # P55289
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 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 neural progenitor cells differentiated by growth factor withdrawal ***Note:*** *Since classic Cadherins can be protected from trypsin treatment in the presence of Ca^{2+}, cells in monolayer cultures are harvested with 0.01% Trypsin in the presence of 1-5 mM $CaCl_2$ at 37° C. Flow cytometry can be performed according to the standard procedures, except that all the cell staining and washing steps are performed in the presence of Ca^{2+} and Mg^{2+} (e.g. using FACS buffer: PBS containing 1 mM $CaCl_2$, 1 mM $MgCl_2$, 2% FBS and 0.02% sodium azide).*

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

The cadherin superfamily is a large family of membrane-associated glycoproteins that engage in homotypic, calcium-dependent, cell-cell adhesion events. The superfamily can be divided into at least four subfamilies based on its member's extracellular (EC) regions and cytoplasmic domains (1, 2). These include classical cadherins, desmosomal cadherins, protocadherins, and cadherin-like molecules that contain a variable number of EC and transmembrane (TM) domains (1). Cadherin-12, also known as brain-cadherin and N-cadherin 2, is a 150 kDa classical cadherin. Classical family molecules are modular in their extracellular region, mediating calcium-dependent cell-cell adhesion through their five EC Ca^{++}-binding repeats (2). Cadherin-12 can be further identified as a type II classical cadherin, due to the absence of a His-Ala-Val motif in its most N-terminal cadherin repeat (3). Human Cadherin-12 is synthesized as a 794 amino acid (aa) type I transmembrane preproprotein that contains a 23 aa signal peptide, a 31 aa prosequence, a 555 aa extracellular region, a 28 aa transmembrane segment, and a 157 aa cytoplasmic domain (4, 5). The five EC cadherin domains are approximately 110 aa in length and generate two β-sheets that are oriented like bread in a sandwich. Human Cadherin-12 EC region is 96% aa identical to mouse Cadherin-12 EC region. Cadherin-12 is expressed specifically in CNS neurons. The bulk of its expression is postnatal, and it is proposed to be involved in synaptogenesis (4). As a classic cadherin, Cadherin-12 will form homodimers and promote intercellular adhesion with itself and, possibly, cadherins-8 and -14 (6).

References:

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3. Gessner, R. and R. Tauber (2000) Ann. N.Y. Acad. Sci. **915**:136.
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5. Tanihara, H. *et al.* (1994) Cell Adhes. Commun. **2**:15.
6. Shimoyama, Y. *et al.* (2000) Biochem. J. **349**:159.

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