Human Cripto-1 APC-conjugated Antibody

Monoclonal Mouse IgG_1 Clone # 89633

Catalog Number: FAB2772A

100 TESTS

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Cripto-1 in ELISAs. In sandwich immunoassays, this antibody does not cross-react with recombinant mouse (rm) Cripto-1, recombinant human (rh) EGF, rhTGF-α, rhTGF-β1, rhTGF-β2, rhTGF-β3, or rhCryptic.
Source	Monoclonal Mouse IgG_1 Clone # 89633
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant human Cripto-1 Arg38-Tyr188 Accession # P13385
Conjugate	Allophycocyanin Excitation Wavelength: 620-650 nm Emission Wavelength: 660-670 nm
Formulation	Supplied 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.

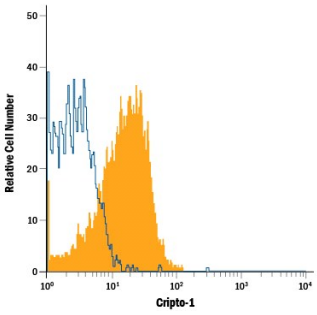
APPLICATIONS

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	10 µL/10^6 cells	See Below

DATA

Flow Cytometry



Detection of Cripto-1 in Human Blood Monocytes by Flow Cytometry. Human peripheral blood monocytes were stained with Mouse Anti-Human Cripto-1 APC-conjugated Monoclonal Antibody (Catalog # FAB2772A, filled histogram) or isotype control antibody (Catalog # IC002A, open histogram). View our protocol for Staining Membrane-associated Proteins.

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.

Human Cripto-1 APC-conjugated Antibody

Monoclonal Mouse IgG_1 Clone # 89633

Catalog Number: FAB2772A

100 TESTS

BACKGROUND

Cripto-1 is the founding member of the Epidermal Growth Factor-CriptoFRL1Cryptic (EGF-CFC) family of signaling proteins that function in cancer and various developmental processes. These developmental processes include: formation of the germ layers and dorsal organizer, specification of anterior-posterior and left-right axes, and differentiation of heart muscle (1, 2). Other members of the EGF-CFC family include Cryptic, *Xenopus* FRL-1 and zebrafish OEP (One-Eyed Pinhead). Overall sequence identity between members of the family is low, but they do share several common domains: a variant EGF-like motif, a novel conserved cysteine-rich domain (called CFC domain), and a C-terminal hydrophobic region. Most EGF-CFC members have a Glycosyl-Phosphatidylinositol (GPI) anchoring site at the C-terminus and exist as extracellular membrane-anchored proteins. However, naturally-occurring soluble isoforms also exist. Human Cripto-1 shares 66% and 28% amino acid identity with mouse Cripto-1 and zebrafish OEP, respectively (2). Despite weak conservation in amino acid identity, EGF-CFC family members appear to function similarly in assays for phenotypic rescue of zebrafish *oep* mutants (2). Both secreted and membrane bound forms of Cripto-1 demonstrate biological activity (3). Cripto-1, also known as CFC-2 or TDGF-1 (Teratocarcinoma-Derived Growth Factor 1), was originally isolated from an undifferentiated human teratocarcinoma cell line as a potential oncogene. It is overexpressed in many types of cancers and acts as a growth factor for tumors (4). Genetic evidence from mice and zebrafish points to a role for Cripto-1 as an essential cofactor in Nodal signaling. Cripto-1 and OEP mutants display defects in mesoderm induction and heart morphogenesis, similar to phenotypes seen in Nodal mutants (2).Cripto-1 acts as a cofactor for Nodal by recruiting the Activin type I Receptor, ALK-4, leading to an Act RIIB-ALK4-Cripto-Nodal complex for signaling (1, 3). Cripto-1 also forms a complex with Activin and Act RIIs to block Activin signaling (5). Studies have shown that other TGF-β superfamily members such as Vg1 and GDF-1 also require EGF-CFC cofactors (6). Cripto-1 can also activate Mitogen-Activated Protein Kinase (MAPK) and Akt pathways independently of Nodal by directly binding to a membrane-associated heparan sulfate proteoglycan, Glypican-1 (7).

References:

1. Rosa, F.M. (2002) Science's STKE http://stke.sciencemag.org/.
2. Shen, M. and A. Schier (2000) Trends Genet. **16**:303.
3. Yan, Y-T. *et al.* (2002) Mol. Cell Biol. **22**:4439.
4. Salomon, D. et al. (2000) Endocrine-Rel. Cancer **7**:199.
5. Gray, P.C. *et al.* (2003) Proc. Natl. Acad. Sci. USA **100**:5193.
6. Cheng, S. *et al.* (2003) Genes & Dev. **17**:31.
7. Bianco, C. *et al.* (2003) Cancer Research **63**:1192.