Human Cryptic Antibody

Antigen Affinity-purified Polyclonal Sheep IgG
Catalog Number: AF1410

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Cryptic in direct ELISAs and Western blots. In direct ELISAs, approximately 5% cross-reactivity with recombinant mouse Cryptic is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Cryptic Tyr26-Gly169 Accession # NP_115934
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.

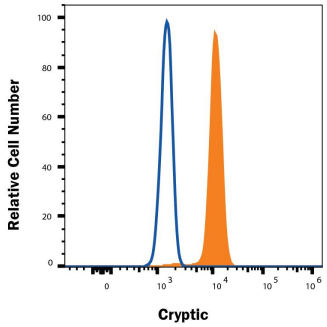
APPLICATIONS

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 Human Cryptic (Catalog # 1410-CR)
Intracellular Staining by Flow Cytometry	0.25 µg/10^6 cells	iPSC mesoderm differentiated cells treated with iPSC kit for Mesoderm differentiation (Catalog # SC030B)
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA

Intracellular Staining by Flow Cytometry



Detection of Cryptic in iPSC mesoderm differentiated cells by Flow Cytometry. iPSC mesoderm differentiated cells treated with iPSC kit for Mesoderm differentiation (Catalog # SC030B) were stained with Sheep Anti-Human Cryptic Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1410, filled histogram) or isotype control antibody (Catalog # 5-001-A, open histogram), followed by Phycoerythrin-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # F0126). To facilitate intracellular staining, cells were fixed and permeabilized with FlowX FoxP3 Fixation & Permeabilization Buffer Kit (Catalog # FC012). View our protocol for Staining Intracellular Molecules.

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.** • 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.

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BACKGROUND

Cryptic, also known at CFC-1, was originally identified as a secreted protein that is specifically expressed during mesoderm differentiation (1). Cryptic, along with Cripto, *Xenopus* FRL-1 and zebrafish OEP (one-eyed pinhead) define the epidermal growth factor-CriptoFRL1Cryptic (EGF-CFC) family of signaling proteins that function in cancer and various developmental processes (2, 3). Overall sequence identity between members of the family is low, but they do share distinct domains: a variant EGF-like motif, a novel conserved cysteine-rich domain (called CFC domain), and a C-terminal hydrophobic region (2). 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 Cryptic shares 55% and 25% amino acid idenitity with mouse Cryptic and human Cripto, respectively. 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).

Cryptic is expressed during gastrulation in the mesoderm and later in the neuroectoderm, marking the prospective floor plate of the neural tube (1). Genetic evidence from mice and humans points to a role for Cryptic in determining left-right asymmetry. Mutations in the *cryptic* gene result in a spectrum of heart, lung and spleen defects, all representing left-right laterality defects (4, 5). These phenotypes resemble some Nodal mutant alleles suggesting that Cryptic, like Cripto, acts as an essential co-factor for Nodal signaling (1, 3). Studies have shown that other TGF-β superfamily members involved in mesoderm induction and left-right patterning, Vg1 and GDF-1, also require EGF-CFC co-factors. Cryptic binds to GDF-1 leading to an Act RIIB-ALK4-Cryptic-GDF-1 complex for signaling (6).

References:

1. Shen, M. *et al.* (1997) Development **124**:429.
2. Shen, M. and A. Schier (2000) Trends Genet. **16**:303.
3. Rosa, F.M. (2002) Science's STKE http://stke.sciencemag.org/.
4. Gaio, U. *et al.* (1999) Curr. Biol. **9**:1339.
5. Bamford, R. *et al.* (2000) Nature Genet. **26**:365.
6. Cheng, S. *et al.* (2003) Genes & Dev. **17**:31.

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