

## DESCRIPTION

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse Cripto in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant mouse (rm) ART, rmArtemin, recombinant human (rh) Cripto-1, recombinant drosophila DPP, recombinant rat (rr) GDNF, rhLAP, rmLefty-1, rrMIS, rhNeurturin, rmNodal, rhTGF- $\alpha$ , rhTGF- $\beta$ 1, rhTGF- $\beta$ 1.2, rhTGF- $\beta$ 2, rhTGF- $\beta$ 3, or recombinant amphibian TGF- $\beta$ 5 is observed.
<b>Source</b>	Monoclonal Rat IgG <sub>2A</sub> Clone # 237614
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant mouse Cripto Arg26-Gln150 Accession # P51865
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m 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 $\mu$ m 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
<b>Western Blot</b>	1 $\mu$ g/mL	Recombinant Mouse Cripto (Catalog # 1538-CR)

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

Cripto 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. Mouse Cripto shares 66% and 34% amino acid identity with human Cripto 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 demonstrate biological activity (3).

Cripto, also known as CFC-2 or TDGF-1 (teratocarcinoma-derived growth factor), 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 as an essential cofactor in Nodal signaling. Cripto and OEP mutants display defects in mesoderm induction and heart morphogenesis, similar to phenotypes seen in Nodal mutants (2).

Cripto acts as a cofactor for Nodal by recruiting the Activin type I Receptor, ALK-4, leading to an Act R1IB-ALK4-Cripto-Nodal complex for signaling (1, 3). Cripto also forms a complex with activin and Act R1Is to block activin signaling (5). Work has shown that other TGF- $\beta$  superfamily members such as Vg1 and GDF-1 also require EGF-CFC cofactors (6). Cripto 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) *Sci STKE* **2002**:pe47.
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.