

## DESCRIPTION

|                           |  |
|---------------------------|--|
| <b>Species Reactivity</b> | Mouse  |
| <b>Specificity</b>        | Detects mouse Cripto in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human (rh) ART, recombinant mouse (rm) ART, rmArtemin, recombinant drosophila DPP, rhGDNF, recombinant rat (rr) GDNF, rhLAP, rhLatent TGF-β1, rhTGF-β2, rhLefty-A, rmLefty-1, rrMIS, rhNeurturin, rmNodal, rhTGF-α, rhTGF-β1, rhTGF-β1.2, rhTGF-β3, or recombinant amphibian TGF-β5 is observed. |
| <b>Source</b>             | Monoclonal Rat IgG <sub>2B</sub> Clone # 237603  |
| <b>Purification</b>       | Protein A or G purified from hybridoma culture supernatant   |
| <b>Immunogen</b>          | Mouse myeloma cell line NS0-derived recombinant mouse Cripto<br>Arg26-Gln150<br>Accession # P51865   |
| <b>Conjugate</b>          | Alexa Fluor 594<br>Excitation Wavelength: 590 nm<br>Emission Wavelength: 617 nm  |
| <b>Formulation</b>        | Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.<br><br>*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                            |
|-----------------------|---------------------------------|-----------------------------------|
| <b>Flow Cytometry</b> | 0.25-1 µg/10 <sup>6</sup> cells | D3 mouse embryonic stem cell line |

## PREPARATION AND STORAGE

|                                |  |
|--------------------------------|--|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.                                  |
| <b>Stability &amp; Storage</b> | <b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, 2 to 8 °C as supplied.</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 RIIB-ALK4-Cripto-Nodal complex for signaling (1, 3). Cripto also forms a complex with activin and Act RIIs to block activin signaling (5). Work has shown that other TGF-β 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:

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