

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Cerberus 1 in direct ELISAs and Western blots. In direct ELISAs, this antibody does not cross-react with recombinant human Cerberus, recombinant mouse (rm) DAN, or rmGremlin.
Source	Monoclonal Rat IgG _{2A} Clone # 225807
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Cerberus 1 Asp18-Pro272 Accession # O55233
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *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.

Western Blot Optimal dilution of this antibody should be experimentally determined.

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

Cerberus 1, also called DAND4, is a member of the DAN domain family of BMP antagonists that includes DAN (DAND1), Gremlin/Drm (DAND2), PRDC (Protein Related to Dan and Cerberus; DAND3), and COCO/Dante (DAND5). DAN family members contain a cysteine-knot domain that is homologous to that found in other TGF-β superfamily ligands (1, 2). Mature mouse Cerberus 1 shares 40%, 29%, and 66% amino acid (aa) sequence identity with chick, *Xenopus*, and human Cerberus 1, respectively. Within the cysteine-knot domain, it shares 24-37% aa sequence identity with mouse DAN, Gremlin, PRDC, and COCO. Cerberus 1 is a secreted 38 kDa glycoprotein that forms disulfide-linked homodimers (3). Cerberus-S, which is generated by proteolysis in *Xenopus*, is a short version of the molecule and includes the C-terminal cysteine-knot domain (4). At the onset of gastrulation, Cerberus 1 is transiently expressed in anterior endodermal structures in response to Nodal and Shh (3, 5-9). Cerberus 1 binds BMP-4 and Nodal and inhibits their activities. *Xenopus* Cerberus has also been shown to bind *Xenopus* Wnt8. These inhibitory functions of Cerberus favor mesodermal development in the anterior region of the gastrula and suppresses posterior mesodermal differentiation (3, 4, 6, 8, 10-12). In chick and *Xenopus*, Cerberus 1 also regulates, but is not required for embryonic left-right polarization, neurulation, and head and heart induction (4-8, 13).

PRODUCT SPECIFIC NOTICES

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