

DESCRIPTION	
Species Reactivity	Human/Mouse
Specificity	Detects human and mouse BOC in direct ELISAs and Western blots.
Source	Monoclonal Mouse IgG _{2A} Clone # 273729
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human BOC Asp31-Asp852 Accession # Q9BWW1
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	1 µg/mL	Recombinant Human BOC (Catalog # 2036-BC)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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. <ul style="list-style-type: none"> ● 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.

BACKGROUND

BOC (Brother of CDO [CAM-related/down-regulated by oncogenes]) is a member of the Immunoglobulin (Ig) superfamily, Ig/Fibronectin (FN) type III repeat family of cell surface proteins (1). Human BOC is a type I transmembrane (TM) protein. It is synthesized as a 1114 amino acid (aa) precursor that contains a 30 aa signal sequence, an 825 aa extracellular domain (ECD), a 21 aa TM segment and a 238 aa cytoplasmic region (1, 2). The ECD contains four Ig-like domains, followed by three FN type III repeats. The third (or juxtramembrane) FN type III repeat (aa 712-809) binds SHH (3). The intracellular region is not essential for BOC-containing receptor complex signaling (1). However, it appears both the ECD and intracellular regions of BOC are used to form functional subunit interactions in *cis*-oriented receptor complexes (1, 4). One 157 aa BOC alternate splice form is reported that shows a 32 aa substitution for aa 126-1114. The ECD of human BOC is 92% aa identical to mouse BOC ECD. BOC is found in the embryo associated with muscle precursors, limb mesenchyme, early chondrocytes and neurons (2, 5, 6). It appears to promote muscle differentiation and axon guidance (2, 6). BOC contributes to two multi-subunit receptor complexes. On myocytes, a BOC-associated complex includes CDO, neogenin, netrin, and at least two cadherin homodimers formed by either M- or N-cadherin (2). A second complex on neurons, somewhat ill-defined, potentially includes BOC, CDO and Gas1. Here, BOC and/or CDO interact with SHH, with subsequent "transfer" or presentation of SHH to PTCH1 (6, 7).

References:

1. Kang, J.-S. *et al.* (2002) *EMBO J.* **21**:114.
2. Krauss, R.S. *et al.* (2005) *J. Cell Sci.* **118**:2355.
3. Yao, S. *et al.* (2006) *Cell* **125**:343.
4. Kang, J.-S. *et al.* (2003) *Proc. Natl. Acad. Sci. USA* **100**:3989.
5. Mulieri, P.J. *et al.* (2002) *Dev. Dyn.* **223**:379.
6. Okada, A. *et al.* (2006) *Nature* **444**:369.
7. Allen, B.L. *et al.* (2007) *Genes Dev.* **21**:1244.