

## DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Mouse                                                                                                                                                                                                                                                                       |
| <b>Specificity</b>        | Detects mouse $\beta$ IG-H3 in direct ELISAs and Western blots. In direct ELISAs, approximately 5% cross-reactivity with recombinant human $\beta$ IG-H3 is observed.                                                                                                       |
| <b>Source</b>             | Monoclonal Rat IgG <sub>2A</sub> Clone # 320305                                                                                                                                                                                                                             |
| <b>Purification</b>       | Protein A or G purified from hybridoma culture supernatant                                                                                                                                                                                                                  |
| <b>Immunogen</b>          | Mouse myeloma cell line NS0-derived recombinant mouse $\beta$ IG-H3<br>Gly24-His683<br>Accession # P82198                                                                                                                                                                   |
| <b>Conjugate</b>          | Alexa Fluor 350<br>Excitation Wavelength: 346 nm<br>Emission Wavelength: 442 nm                                                                                                                                                                                             |
| <b>Formulation</b>        | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<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.

**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

Beta IG-H3, also known as TGFBI and RGD-CAP, is a matricellular adaptor protein that is induced in most cell types in response to TGF- $\beta$  stimulation (1-4). The mouse  $\beta$ IG-H3 cDNA encodes a 683 amino acid (aa) precursor that includes a 23 aa signal sequence, one EMI domain, four FAS1 domains, and one RGD motif (2). Mouse  $\beta$ IG-H3 shares 91% aa sequence identity with human and porcine  $\beta$ IG-H3.  $\beta$ IG-H3 is expressed as a 75 kDa protein with no post-translational additions (5). Following secretion, cleavages at multiple positions near the C-terminal end liberate peptides with pro-apoptotic activity (5, 6). Peptides that encompass the RGD motif contribute to the pro-apoptotic effects of TGF- $\beta$  (6). FAS1 domains contain YH motifs that are characterized by conserved Tyr and His residues (7). The YH motifs in each of the FAS1 domains enable  $\beta$ IG-H3 to bind to matrix fibronectin, collagen I, collagen VI, biglycan, and decorin (3, 8-11), in addition to cell expressed integrins  $\alpha$ V $\beta$ 3,  $\alpha$ V $\beta$ 5, and  $\alpha$ 3 $\beta$ 1 (7, 8, 12, 13). The expression of  $\beta$ IG-H3 is modulated at particular developmental stages in some cell types. It is upregulated in keratinocytes and immature dendritic cells but downregulated in osteoblasts (8, 12, 14). It promotes keratinocyte differentiation but blocks osteoblast differentiation (8, 12).  $\beta$ IG-H3 stimulates macrophage endocytosis and vascular endothelial cell proliferation and migration (13, 14). High glucose levels induce  $\beta$ IG-H3 in renal proximal tubule cells which is predictive of diabetic nephropathy (3). Several point mutations (clustered in the fourth FAS1 domain) of  $\beta$ IG-H3 are linked to different corneal dystrophies (15).  $\beta$ IG-H3 is downregulated in many cancers (4, 16) and functions as a suppressor of tumorigenicity when overexpressed (2, 4, 16).

## PRODUCT SPECIFIC NOTICES

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