Human βIG-H3 Biotinylated Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: BAF2935

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human βIG-H3 in ELISAs and Western blots. In sandwich immunoassays, less than 0.1% cross-reactivity with recombinant mouse βIG-H3 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human βIG-H3 Gly24-His683 Accession # Q15582
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

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	0.1 µg/mL	Recombinant Human βIG-H3 (Catalog # 3409-BG)
Human βIG-H3 Sandwich Immunoassay		**Reagent**
ELISA Capture	2-8 µg/mL	Human βIG-H3 Antibody (Catalog # MAB2935)
ELISA Detection	0.1-0.4 µg/mL	Human βIG-H3 Biotinylated Antibody (Catalog # BAF2935)
Standard		Recombinant Human βIG-H3 (Catalog # 3409-BG)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 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

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-β stimulation (1-4). The human βIG-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 (1). Human βIG-H3 shares 91% and 93% aa sequence identity with mouse and porcine βIG-H3, respectively. βIG-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-β (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 βIG-H3 binding to matrix Fibronectin, Collagen I, and Collagen VI (3, 8-10) in addition to cell expressed Integrins $\alpha_V\beta_3$, $\alpha_V\beta_5$, and $\alpha_3\beta_1$ (7, 8, 11, 12). The expression of βIG-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, 11, 13). It promotes keratinocyte differentiation but blocks osteoblast differentiation (8,11). βIG-H3 stimulates macrophage endocytosis and vascular endothelial cell proliferation and migration (12, 13). High glucose levels induce βIG-H3 in renal proximal tubule cells which is predictive of diabetic nephropathy (3). Several point mutations (clustered in the fourth FAS1 domain) of βIG-H3 are linked to different corneal dystrophies (14). βIG-H3 is downregulated in many cancers (4, 15) and functions as a suppressor of tumorigenicity when overexpressed (2, 4, 15).

References:

1. Skonier, J. *et al.* (1992) DNA Cell Biol. **11**:511.
2. Skonier, J. *et al.* (1994) DNA Cell Biol. **13**:571.
3. Lee, S-H. *et al.* (2003) Kidney Int. **64**:1012.
4. Zhao, Y.L. *et al.* (2002) Oncogene **21**:7471.
5. Andersen, R.B. *et al.* (2004) Biochemistry **43**:16374.
6. Kim, J-E. *et al.* (2003) Oncogene **22**:2045.
7. Kim, J-E. *et al.* (2002) J. Biol. Chem. **277**:46159.
8. Thapa, N. *et al.* (2005) Bone **36**:232.
9. Hanssen, E. *et al.* (2003) J. Biol. Chem. **278**:24334.
10. Billings, P.C. *et al.* (2002) J. Biol. Chem. **277**:28003.
11. Oh, J-E. *et al.* (2005) J. Biol. Chem. **280**:21629.
12. Nam, J-O. *et al.* (2003) J. Biol. Chem. **278**:25902.
13. Cao, W, *et al.* (2006) Blood **107**:2777.
14. Stewart, H.S. *et al.* (1999) Hum. Mutat. **14**:126.
15. Zhao, Y. *et al.* (2006) Mol. Carcinog. **45**:84.

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