

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Gas1 in ELISAs and Western blots. In sandwich immunoassays, less than 0.05% cross-reactivity with recombinant mouse Gas1 and recombinant human Gas6 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Gas1 Leu40-Ser318 Accession # P54826
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 Gas1 (Catalog # 2636-GS)
Human Gas1 Sandwich Immunoassay		Reagent
ELISA Capture	2-8 µg/mL	Human Gas1 Antibody (Catalog # MAB2636)
ELISA Detection Standard	0.1-0.4 µg/mL	Human Gas1 Biotinylated Antibody (Catalog # BAF2636) Recombinant Human Gas1 (Catalog # 2636-GS)

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	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <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

Gas1 (Growth Arrest Specific 1) is one of six structurally unrelated proteins that were identified by their increased expression in growth-arrested cells relative to actively proliferating cells (1, 2). Following mitogenic stimulation, Gas1 expression is transcriptionally suppressed by c-Myc as cells transit from G₀ to G₁ phases of the cell cycle (3, 4). Overexpression of Gas1 prevents S phase entry and DNA synthesis (5). Gas1-mediated blockade of the cell cycle is p53-dependent but does not require the transactivating domain of p53 (6). The human Gas1 cDNA encodes a 345 amino acid (aa) precursor that includes a 39 aa signal sequence, a 279 aa mature protein, and a 27 aa C-terminal propeptide. Gas1 contains Ala-rich and Asp-rich regions as well as an RGD sequence (5). Mature human and mouse Gas1 share 85% aa sequence identity. Human Gas1 is a 40 kDa GPI-linked glycoprotein that is uniformly distributed on the cell surface (7). In contact-inhibited vascular endothelial cells, Gas1 is induced by VE-Cadherin and VEGF expression and mediates the anti-apoptotic effect of VEGF (8). In contrast, Gas1 is induced in hippocampal neurons after NMDA exposure but functions as a pro-apoptotic effector of NMDA-mediated excitotoxicity (9). Gas1 exhibits a range of developmental actions including either promoting or inhibiting growth and differentiation of somite, limb, cerebellar, and eye tissues (10 - 14). Gas1 contributes to the antagonistic effect of Wnt proteins toward Shh function by binding the N-terminal region of Shh (11). The dependence of Gas1 function on the cellular context has been addressed by suggesting that Gas1 could function as a co-receptor for GDNF family ligands (15). This speculation is supported by R&D Systems data which demonstrate direct binding of Gas1 to Artemin and Neurturin.

References:

1. Schneider, C. *et al.* (1988) *Cell* **54**:787.
2. Mullor, J.L. and A.R. Altaba (2002) *BioEssays* **24**:22.
3. Del Sal, G. *et al.* (1994) *Proc. Natl. Acad. Sci. USA* **91**:1848.
4. Lee, T.C. *et al.* (1997) *Proc. Natl. Acad. Sci. USA* **94**:12886.
5. Del Sal, G. *et al.* (1992) *Cell* **70**:595.
6. Del Sal, G. *et al.* (1995) *Mol. Cell. Biol.* **15**:7152.
7. Stebel, M. *et al.* (2000) *FEBS Lett.* **481**:152.
8. Spagnuolo, R. *et al.* (2004) *Blood* **103**:3005.
9. Mellstrom, B. *et al.* (2002) *Mol. Cell Neurosci.* **19**:417.
10. Lee, K.K.H. *et al.* (2001) *Dev. Biol.* **234**:188.
11. Lee, C.S. *et al.* (2001) *Proc. Natl. Acad. Sci. USA* **98**:11347.
12. Liu, Y. *et al.* (2002) *Development* **129**:5289.
13. Liu, Y. *et al.* (2001) *Dev. Biol.* **236**:30.
14. Lee, C.S. *et al.* (2001) *Dev. Biol.* **236**:17.
15. Schueier-Furman, O. *et al.* (2006) *Trends Pharmacol. Sci.* **27**:72.