Recombinant Mouse GASP-1/WFIKKN2

Catalog Number: 9956-GS

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived mouse GASP-1/WFIKKN2 protein Met1-Gln571, With a C-Terminal 6-His tag Accession # Q7TQN3
N-terminal Sequence Analysis	Leu30
Predicted Molecular Mass	61 kDa

SPECIFICATIONS

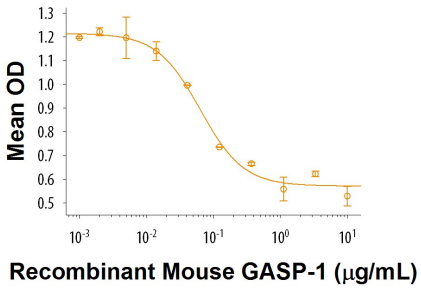
SDS-PAGE	63-77 kDa, reducing conditions
Activity	Measured by its ability to inhibit rmGDF-8 activity in K562 human chronic myelogenous leukemia cells. The ED_{50} for this effect is 0.02-0.12 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 250 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	• 12 months from date of receipt, ≤ -20 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, ≤ -20 °C under sterile conditions after reconstitution.

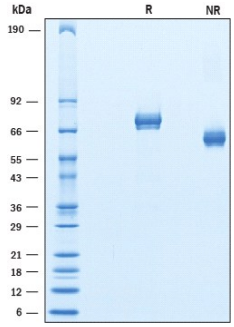
DATA

Bioactivity



Recombinant Mouse GASP-1/WFIKKN2 (Catalog # 9956-GS) dose dependently inhibits Recombinant Human/Mouse/Rat GDF-8/Myostatin (Catalog # 788-G8) activity in the K562 human chronic myelogenous leukemia cell line. The ED_{50} for this effect is 0.02-0.12 µg/mL.

SDS-PAGE



2 µg/lane of Recombinant Mouse GASP-1/WFIKKN2 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® blue staining, showing bands at 63-77 kDa and 55-66 kDa, respectively.

BACKGROUND

Growth and differentiation factor-associated serum protein 1 (GASP-1), also known as WAP, Follistatin/Kazal, Immunoglobulin, Kunitz and Netrin domain containing protein 2 (WFIKKN2), appears to be a multifunctional molecule comprised of several conserved domains. GASP-1, along with the highly related GASP-2 (WFIKKN1), contains a WAP domain, a Follistatin/Kazal domain, an Immunoglobulin domain, two Kunitz-type protease inhibitor domains and a netrin domain (1). GASP-1 was first isolated in a screen to identify proteins in mice that copurify with Myostatin (GDF8) (1). Mature mouse GASP-1 is 542 amino acids (aa) and shares 94% and 98% aa identity with mature human and rat GASP-1, respectively.

WAP, Follistatin, Kazal and Netrin domains are all implicated in protease inhibition, and GASP-1 and 2 may be protease inhibitor proteins involved in muscle development (1). In humans, GASP-1 and 2 show distinct expression patterns, with GASP-1 expression during development highest in the brain, skeletal muscle, thymus and kidney (2). In mice, GASP-1 expression can be detected in the neural tube and limb buds of developing embryos, while in adult mice it is found in numerous tissue types (3, 4). Both GASP-1 and 2 appear to bind several members of the TGFβ family with high affinity, including Activin, BMP2, BMP4, TGF-β1, GDF-8 and GDF-11 (1, 5, 6). Interestingly, GASP-1 has been shown to specifically inhibit the activity of GDF-8 and GDF-11 but not the other TGF-β family proteins (1, 4, 6). GASP-1 binds directly but independently to both mature myostatin and the myostatin propeptide (1). Over expression of GASP-1 in mice results in animals that are hyper muscled, consistent with reduction in GDF-8 signaling (7).

References:

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3. Monestier, O. *et al.* (2012) PLoS One **7(8)**:e43710.
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5. Kondas, K. *et al.* (2008) JBC **283**:23677.
6. Szlama, G. *et al.* (2010) FEBS J **277**:5040.
7. Monestier, O. *et al.* (2012) BMC Genomics **13(1)**:541.

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