AdipoGen®
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PRODUCT DATA SHEET

AG-40A-0188 03-Oct-2011

Progranulin (human) (rec.) (untagged)
[Proepithelin; PEPI; PC Cell-derived Growth Factor]

AG-40A-0188-C010	10 µg
AG-40A-0188-C050	50 µg

Source/Host	HEK 293 cells
MW	~72kDa (glycosylated protein by SDS-PAGE)
Sequence	Signal peptide and human progranulin (aa 1-593) is untagged. Reflects the native sequence with no additional aa.

Handling / Storage

Shipping	BLUE ICE
Short Term Storage	+4°C
Long Term Storage	-20°C

After opening, prepare aliquots and store at -20°C. Avoid freeze/thaw cycles.

Use / Stability
Working aliquots are stable for up to 3 months when stored at -20°C.

MSDS available at www.adipogen.com or upon request.

Product Specifications

Biological Activity	Activates phospho-ERK1/2 in neuronal mouse P19 cells. Regulates food intake and body weight (see reference 1).
Purity	≥95% (SDS-PAGE)
Formulation	Lyophilized from 0.2µm-filtered solution in PBS, pH 7.2.
Reconstitution	Reconstitute in distilled water.
Endotoxin Content	<0.1EU/µg purified protein (LAL test; Lonza).

Other Product Data

Uniprot link P28799: Granulins (human) [Precursor]

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Product Description

Progranulin (PGRN) is a widely expressed pluripotent growth factor which plays a role in processes such as development, wound repair and inflammation by activating signaling cascades that control cell cycle progression and cell motility. Its function in the central nervous system is of interest, as mutations in the PGRN gene were found in cases of frontotemporal degeneration (FTLD). In addition, PGRN has also been linked to tumorigenesis. Progranulin is a biomarker for FTLD, other types of Alzheimer's Disease (AD) and potentially for MCI (Mild Cognitive Impairment). Additionally, PGRN is described as a new ligand of TNF receptors and a potential therapeutic against inflammatory disease like arthritis.

Product Specific References

1. Involvement of Progranulin in Hypothalamic Glucose Sensing and Feeding Regulation: H.K. Kim, et al.; Endocrinology **152,** 4672 (2011)

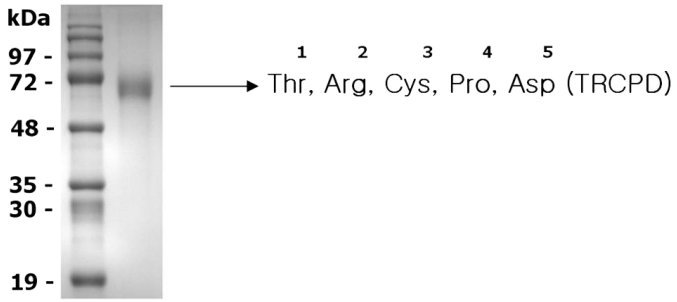

Figure 1: NH_2-terminal sequence analysis.

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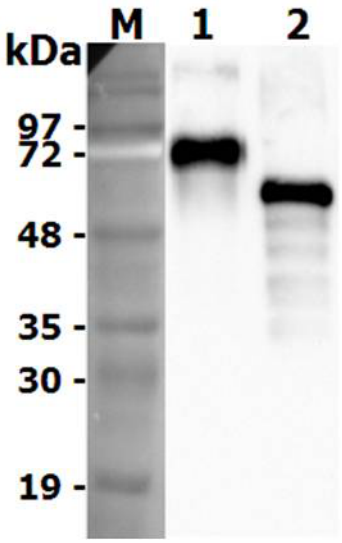

Figure 2: Deglycosylation of human progranulin. To examine the deglycosylation of human Progranulin, 1 µg of human progranulin is denatured with 1X glycoprotein denaturing buffer at 100°C for 10 minutes. After the addition of NP-40 and G7 reaction buffer, twofold dilutions of PNGase F are added and the reaction mix is incubated for 1 hour at 37°C. Separation of reaction products is visualized by immunoblotting using anti-Progranulin (human), pAb (Prod. No. AG-25A-0112).

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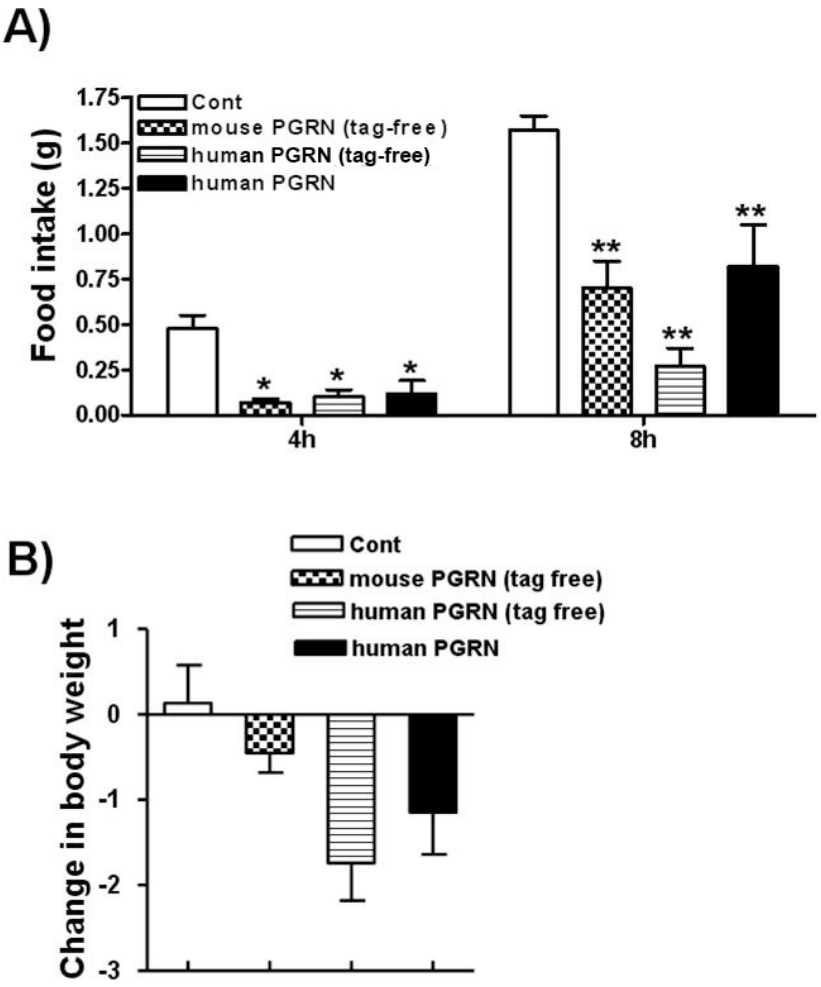

Figure 3: Regulation of food intake and body weight by human progranulin. Permanent 26-gauge stainless steel cannulae were implanted into the third ventricle (ICV), or into the bilateral mediobasal hypothalamus (iMBH) of mice. After a 1-week recovery period, mice were handled daily for 3 days to acclimatize them to the injection procedure. Correct positioning of ICV-implanted cannulae was tested by verifying the presence of a dipsogenic response to angiotensin-2 (50 ng). The correct positioning of each iMBH cannulae was confirmed by histological examination, performed by independent observer after each animal was sacrificed. Only mice in which cannulae had been correctly positioned were included in data analysis. The peptides, 2-DG and AICAR were dissolved in 0.9% (w/v) saline and administered in a total volume of 2.5 ml for ICV injection and 1 ml for iMBH injection, respectively. Food intake and body weight were monitored for 24 h post-injection. *See reference 1.

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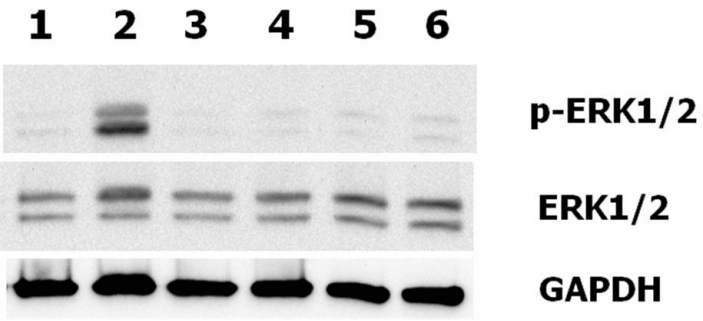

Figure 4: The effects on phospho-ERK1/2 and non-phospho-ERK1/2 by Progranulin (human) (rec.) (untagged) (Prod. No. AG-40A-0188) in neuronal differentiated mouse P19 cells. Undifferentiated mouse P19 embryonal carcinoma cells were induced to differentiated in 1μM retinoic acid (RA) in α-minimum essential medium (αMEM) containing 10% heat-treated fetal bovine serum on bacterial grade plates for 3~4 days to allow aggregates to form (generation of embryonic bodies). The aggregates were then plated out tissue culture grade plates in the absence of RA for 3~4days. To examine the induction of signal of phospho-p44/42 MAPK and p44/42 MAP kinase, reactions were carried out at 37°C over 0, 5, 10, 30, 60, 120mins, respectively by adding the recombinant protein (500ng/ml) to the neuronal differentiated mouse P19 embryonal carcinoma cells, which were maintained with serum starvation for 24hrs. Treatment with Progranulin (human) (rec.) (untagged) was performed in lanes 1, 2, 3, 4, 5, and 6 over 0, 5, 10, 30, 60, 120mins, respectively. GAPDH was used as loading control for western blotting.

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