BioVision

rev 06/21

For research use only

Progranulin (Untagged), Human CellExp™, human recombinant

CATALOG #:	4737-10	10 µg
	4737-50	50 µg

ALTERNATE NAMES: Proepithelin, PEPI, PC Cell-derived Growth Factor.

SOURCE: HEK 293 cells

SEQUENCE: Signal peptide and human progranulin (aa 1-593) is untagged. Reflects the native sequence with no additional amino acids.

PURITY: ≥ 95% by SDS-PAGE

MOL. WEIGHT: ~74 kDa (observed due to glycosylation)

FORMULATION: Lyophilized from PBS, pH 7.4

ENDOTOXIN CONTENT: < 0.1 EU/µg purified protein

STORAGE CONDITIONS: Reconstitute and store aliquots at -20 °C. Avoid repeated freeze-thaw cycles.

DESCRIPTION:

Progranulin (PGRN), also called proepithelin and PC cell-derived growth factor, is a single precursor protein of granulins which are a family of secreted, glycosylated peptides. It 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 fronto-temporal 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.

FOR RESEARCH USE ONLY! Not to be used on humans.

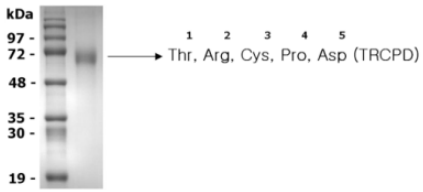

Figure 1: NH_2-terminal sequence analysis.

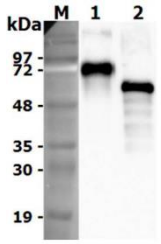

Figure 2: Deglycosylation of human progranulin.

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 pAb (human).

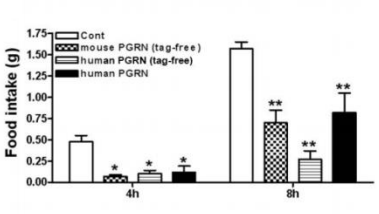

Figure 3: Regulation of food intake and body weight by human progranulin. Permanent 26-gauge stainless steel cannulae were implanted into the third ventricle (ICV), or into the bilateral mediobasal hypothalamus (iMBH) of mice. After a 1-week recovery period, mice were handled daily for 3 days to acclimatize 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.

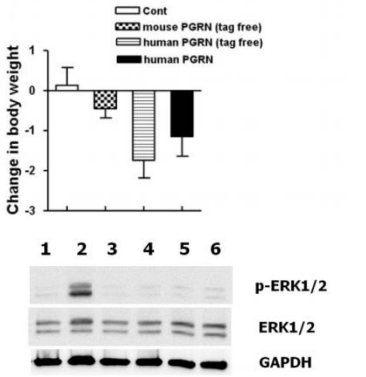

Figure 4: The effects on phospho-ERK1/2 and non-phospho-ERK1/2 by Progranulin (human) (rec.) (untagged) in neuronal differentiated mouse P19 cells. Undifferentiated mouse P19 embryonal carcinoma cells were induced to differentiated in 1µM retinoic acid (RA) in α-minimum essential medium (αMEM) containing 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.

RELATED PRODUCTS:

- Recombinant Human Progranulin **(Cat. No. 4738-10, 100)**
- Recombinant Rat Progranulin **(Cat. No. 4735-10, 50)**
- Progranulin (Human) ELISA Kit **(Cat. No. K4738)**
- Anti-Human Ephrin Type A Receptor 2 (1C1) Antibody **(Cat. No. A1095)**
- TNF-R1 Antibody **(Cat. No. 5348)**

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