

DESCRIPTION

Source Human embryonic kidney cell, HEK293-derived
Gln23-Asn166
Accession # P05451

N-terminal Sequence Analysis No results obtained. Gln23 inferred from enzymatic pyroglutamate treatment revealing Glu24

Structure / Form

Predicted Molecular Mass 16 kDa

SPECIFICATIONS

SDS-PAGE 17-20 kDa, reducing conditions

Activity Measured by its ability to enhance neurite outgrowth of E16-E18 rat embryonic cortical neurons. Recombinant Human Reg1A, immobilized at 5 µg/mL, is able to significantly enhance neurite outgrowth.

Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.

Purity >90%, 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. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 500 µg/mL in 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.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Reg1A (Regenerating islet-derived 1 alpha), also called Lithostatine-1-alpha or Pancreatic stone protein (PSP), is a secreted, variably glycosylated 15-22 kDa type I member of the REG gene family. The Reg multigene family consists of four subclasses, types I, II, III and IV, based on the primary structures of the encoded proteins of the genes. Reg1A is also a member of the Reg family of secreted C-type lectin domain-containing pancreatic proteins (1, 2). The human Reg1A cDNA encodes a 166 amino acids (aa) precursor which contains a 22 aa signal peptide and a 144 aa secreted mature protein. Human Reg1A shares 86% aa sequence identity with Reg1B, and shares 76% and 69% aa sequence identity with mouse and rat Reg1A, respectively. Reg1A was first described in cells of digestive systems, but is also expressed in a variety of other tissues including neuronal cell lines (PC12 and Neuro-2a) and in rat primary hippocampal neurons (3, 4). In the digestive system, Reg-1A acts as a paracrine/autocrine factor and plays an important role in cell proliferation, differentiation, inflammation, and carcinogenesis (5, 6). In neurons, Reg-1A is preferentially localized at the membrane and around the nucleus of neuronal cells (4). In addition, Reg-1A is secreted, and it positively regulates neurite outgrowth possibly through the membrane receptor exostosin tumor-like 3 (EXTL3) (4). Reg-1A is overexpressed during the very early stages of Alzheimer disease, and its deposits were detected in the brain of patients with Alzheimer disease (7).

References:

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