

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived mouse gAdiponectin/gAcrp30 protein
Ala111-Asn247 & Tyr112-Asn247, both with a C-terminal 6-His tag
Accession # Q60994

N-terminal Sequence Analysis Ala111 & Tyr112

Predicted Molecular Mass 16.7 kDa (monomer)

SPECIFICATIONS

SDS-PAGE 18-24 kDa, reducing conditions

Activity Measured by its ability to induce TIMP-1 secretion by mouse macrophages. Kumada, M. *et al.* (2004) *Circulation* **109**:2046.
The ED₅₀ for this effect is 5-20 µg/mL.

Endotoxin Level <1.0 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 Supplied as a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping The product is shipped with dry ice or equivalent. 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 opening.
- 3 months, -20 to -70 °C under sterile conditions after opening.

BACKGROUND

Adiponectin, alternatively named Adipocyte Complement-Related Protein of 30 kDa (Acrp30), shares structural similarity with complement factor C1q and is a member of the family of defense collagens (1 - 7). It is secreted exclusively by differentiated adipocytes and circulates at high concentrations (in µg/mL range). Adiponectin has a modular structure comprising an N-terminal collagenous domain with multiple collagen triple helix repeats, followed by a C-terminal C1q-like globular domain. The globular domain has similar folding topology with tumor necrosis factor-α and assembles into homotrimers. Higher order oligomeric adiponectins (hexamers and higher molecular weight forms) are also formed via interactions between the collagenous stalk. A truncated form of Adiponectin containing only the globular domain (gAdiponectin or gAcrp30) can be generated by proteolytic cleavage (5). The gAdiponectin as well as all oligomeric forms of the full length Adiponectin are detected in serum. Different isoforms of Adiponectin have been shown to activate different signal transduction pathways (8 - 11). Conflicting biological activities have been reported for the various isoforms.

Two seven membrane-spanning Adiponectin receptors, designated AdipoR1 and AdipoR2 have been identified (12). AdipoR1 is expressed predominantly in muscle and functions as a high-affinity receptor for gAdiponectin, but a very low-affinity receptor for the full length Adiponectin. AdipoR2 binds both the full length and globulin domain with intermediate affinity and is expressed primarily in liver.

Adiponectin is an anti-diabetic and anti-atherogenic hormone that plays important roles in the regulation of lipid and glucose metabolism (1 - 7). Similarly to full length Adiponectin, recombinant gAdiponectin from R&D Systems has been shown to inhibit proliferation of mouse M1 myeloid cells (13). The 137 amino acid (aa) residue globular domain of mouse Adiponectin shares 89% aa sequence identity with the human homologue.

References:

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