

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived
Ala108-Asn244, with a C-terminal 6-His tag
Accession # Q15848

N-terminal Sequence Ala108

Analysis

Predicted Molecular Mass 16.7 kDa (monomer)

SPECIFICATIONS

SDS-PAGE 19-20 kDa, reducing conditions

Activity Bioassay data are not available.

Endotoxin Level <0.01 EU per 1 µg of the protein by the LAL method.

Purity >95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

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 polar packs. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage ● 4 months from date of receipt, 2 to 8 °C as supplied.

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 globular domain of human Adiponectin shares 89% aa sequence identity with the mouse homologue.

References:

1. Scherer, P.E. *et al.* (1995) *J. Biol. Chem.* **270**:26746.
2. Hu, E. *et al.* (1996) *J. Biol. Chem.* **271**:10697.
3. Maeda, K. *et al.* (1996) *Biochem. Biophys. Res. Commun.* **221**:286.
4. Tsao, T-S. *et al.* (2002) *J. Biol. Chem.* **277**:29359.
5. Fruebis, J. *et al.* (2001) *Proc. Natl. Acad. Sci. USA* **98**:2005.
6. Berg, A.H. *et al.* (2001) *Nature Med.* **7**:947.
7. Pajvani, U.T. *et al.* (2003) *J. Biol. Chem.* **278**:9073.
8. Tomas, E. *et al.* (2002) *Proc. Natl. Acad. Sci. USA* **99**:16309.
9. Tsao, T.S. *et al.* (2003) *J. Biol. Chem.*, Sept. 30 [Epub ahead of print].
10. Wang, Y. *et al.* (2002) *J. Biol. Chem.* **277**:19521.
11. Sato, C. *et al.* (2001) *J. Biol. Chem.* **276**:28849.
12. Yamauchi, T. *et al.* (2003) *Nature* **423**:762.
13. Yokota, T. *et al.* (2000) *Blood* **96**:1723.