Recombinant Human Osteoadherin/OSAD

Catalog Number: 2884-AD

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Gln21-Glu421, with a C-terminal 6-His tag Accession # Q99983
N-terminal Sequence Analysis	No results obtained: Gln21 predicted
Predicted Molecular Mass	47.9 kDa

SPECIFICATIONS

SDS-PAGE	60-66 kDa, reducing conditions
Activity	Measured by its ability to induce adhesion of ATDC5 mouse chondrogenic cells. Recombinant Human Osteoadherin, immobilized at 20 µg/mL (100 µL/well) can induce more than 35% of ATDC-5 cell adhesion.
Endotoxin Level	<0.10 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	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile 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

Osteoadherin (OSAD), also known as Osteomodulin, is an extracellular matrix keratan sulfate proteoglycan that belongs to the class II subfamily of small leucine-rich proteoglycans (SLRP). LRR motifs consist of approximately 20 - 30 amino acids (aa) with conserved leucine spacing, folded into a structure with one β-sheet and one α-helix (1, 2). The human OSAD cDNA encodes a 421 aa precursor that contains a 20 aa signal sequence and eleven tandem leucine rich repeats (3). Human OSAD shares 80 - 84% aa sequence identity with bovine, mouse, and rat OSAD. Human OSAD shares 32 - 35% aa sequence identity with human class II SLRPs Fibromodulin, Keratocan, Lumican, and PRELP. Bovine, mouse, and rat OSAD are expressed as 60 - 85 kDa molecules, although the amino acid sequence for each predicts a size of 46 - 47 kDa. The primary difference is due to the presence of extensive N-linked glycosylation that can also vary between tissues of the same species (4, 5). Human OSAD is expressed as an even larger 110 kDa molecule in teeth (6). OSAD contains eight sulfated tyrosine residues (4, 7) and is distinguished from other class II SLRPs by the presence of an approximately 70 aa C-terminal acidic domain (3). OSAD is expressed by fetal and adult osteoblasts but is not detectable in cartilage or tendon (3, 4, 8). In dental tissue, OSAD is expressed by odontoblasts and ameloblasts (5, 9 - 11) and is involved in the mineralization of bone and teeth (5, 11, 12). OSAD promotes the adhesion of osteoblasts and odontoblasts to the surrounding matrix, an interaction that is mediated by Integrin αVβ3 (4, 6).

References:

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