Recombinant Human OSCAR Fc Chimera

Catalog Number: 9955-OS

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived human OSCAR protein

Human OSCAR (Asp19-Asn229) Accession # NP_573399	IEGRMD	Human IgG_1 (Pro100-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis	Asp19
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	50 kDa

SPECIFICATIONS

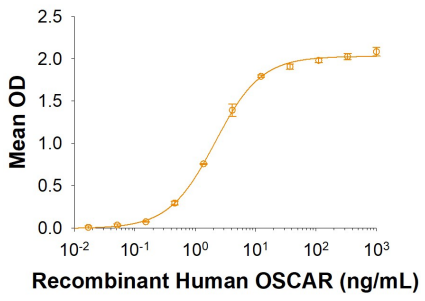
SDS-PAGE	61-70 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Bovine Collagen I is coated at 10 µg/mL, Recombinant Human OSCAR Fc Chimera binds with an ED_{50} of 1-8 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, 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 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	• 12 months from date of receipt, ≤ -20 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, ≤ -20 °C under sterile conditions after reconstitution.

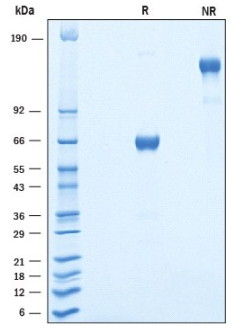
DATA

Binding Activity



When Bovine Collagen I is coated at 10 µg/mL, Recombinant Human OSCAR Fc Chimera binds with an ED_{50} of 1-8 ng/mL.

SDS-PAGE



2 µg/lane of Recombinant Human OSCAR was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® blue staining, showing bands at 61-70 kDa and 120-140 kDa, respectively.

BACKGROUND

OSCAR (Osteoclast-associated immunoglobulin-like receptor), also known as PIgR-3 (polymeric immunoglobulin-like receptor), is a type I transmembrane protein of the leukocyte receptor complex (LRC) family (1). The mature human OSCAR includes an extracellular domain (ECD) with two Ig domains homology to PIR family proteins, a transmembrane region, and a cytoplasmic domain. The ECD of human OSCAR shares 77% and 72% amino acid sequence identity with the ECD of mouse and rat OSCAR, respectively. OSCAR is specifically expressed by pre-osteoclasts and signals via FcRγ (2). OSCAR co-stimulates one of the major FcRγ-associated pathways required for osteoclastogenesis *in vivo* (2). Collagen type I and collagen type II serve as ligands for OSCAR (3). OSCAR binds to specific motifs within fibrillary collagens in the extracellular matrix (ECM) (2). OSCAR promoted osteoclastogenesis *in vivo*, and its binding to the collagen motif led to signaling that increased numbers of osteoclasts in culture (2). OSCAR contains two immunoglobulin-like domains, D1 and D2. Direct binding assays on OSCAR molecules showed that D2, but not D1, is critical for collagen binding (4). OSCAR may contribute to the pathogenesis and severity of a number of diseases including osteoporosis, atherosclerosis, chronic obstructive pulmonary disease and rheumatoid arthritis (4).

References:

1. Kim N. *el al.* (2002) J. Exp. Med. **195**:201.
2. Barrow, A.D. *et al.* (2011) J. Clin. Invest. **121**:3505.
3. Shultz, H.S. *et al.* (2016) Eur. J. Immunol. **46**:952.
4. Zhou, L. *et al.* (2016) Blood **127**:529.

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