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OPG (h): 293T Lysate: sc-159871

BACKGROUND

Bone morphogenesis and remodeling involve the formation of bone from osteoblasts and the resorption of bone by osteoclasts. The cytokine osteoprotegerin (OPG), also designated osteoclastogenesis inhibitory factor (OCIF), is known to inhibit osteoclast formation. A secreted glycoprotein, OPG is a member of the TNF receptor family that increases bone density and volume. OPG is thought to inhibit osteoclastogenesis by disrupting the cell-to-cell signaling between osteoblastic stromal cells and osteoclast progenitors. OPG is known to bind to TRAIL, a death domain-containing protein, and to inhibit TRAIL apoptosis in Jurkat cells. OPG also binds to RANKL, also known as osteoclast differentiation factor (ODF) and TRANCE, a membrane-bound protein belonging to the TNF ligand family. Both TNF α and TNF β upregulate OPG expression, while the bone resorbing agent prostaglandin E2 down-regulates OPG.

REFERENCES

1. Simonet, W.S., et al. 1997. Osteoprotegerin: a novel secreted protein involved in the regulation of bone density. *Cell* 89: 309-319.
2. Hill, P.A. 1998. Bone remodeling. *Br. J. Orthod.* 25: 101-107.
3. Yasuda, H., et al. 1998. Identity of osteoclastogenesis inhibitory factor (OCIF) and osteoprotegerin (OPG): a mechanism by which OPG/OCIF inhibits osteoclastogenesis *in vitro*. *Endocrinology* 139: 1329-1337.
4. Emery, J.G., et al. 1998. Osteoprotegerin is a receptor for the cytotoxic ligand TRAIL. *J. Biol. Chem.* 273: 14363-14367.
5. Yasuda, H., et al. 1998. Osteoclast differentiation is a ligand for osteoprotegerin/osteoclastogenesis-inhibitory factor and is identical to TRANCE/RANKL. *Proc. Natl. Acad. Sci. USA* 95: 3597-3602.
6. Brandstrom, H., et al. 1998. Regulation of osteoprotegerin mRNA levels by prostaglandin E2 in human bone marrow stroma cells. *Biochem. Biophys. Res. Commun.* 247: 338-341.
7. Brandstrom, H., et al. 1998. Tumor necrosis factor α and β upregulate the levels of osteoprotegerin mRNA in human osteosarcoma MG-63 cells. *Biochem. Biophys. Res. Commun.* 248: 454-457.

CHROMOSOMAL LOCATION

Genetic locus: TNFRSF11B (human) mapping to 8q24.12.

PRODUCT

OPG (h): 293T Lysate represents a lysate of human OPG transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20 $^{\circ}$ C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

OPG (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive OPG antibodies. Recommended use: 10-20 μ l per lane.

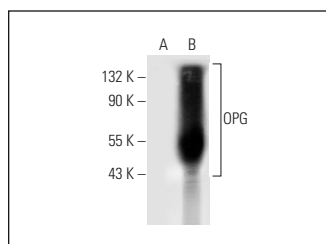
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

OPG (E-10): sc-390518 is recommended as a positive control antibody for Western Blot analysis of enhanced human OPG expression in OPG transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

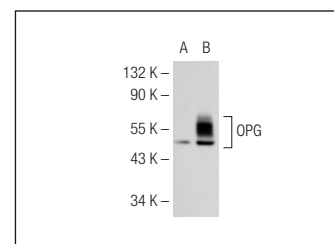
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



OPG (E-10): sc-390518. Western blot analysis of OPG expression in non-transfected: sc-117752 (A) and human OPG transfected: sc-159871 (B) 293T whole cell lysates.



OPG (4H219): sc-71747. Western blot analysis of OPG expression in non-transfected: sc-117752 (A) and human OPG transfected: sc-159871 (B) 293T whole cell lysates.

RESEARCH USE

For research use only, not for use in diagnostic procedures.