

# BMPR-IA (7K7): sc-134285

## BACKGROUND

Members of the transforming growth factor  $\beta$  superfamily bind to a pair of transmembrane proteins, known as receptor types I and II, which contain serine/threonine kinases and associate to form a signaling complex. Two type I receptors have been characterized, BMPR-IA (also designated SKR5, ALK-3 and BRK-1) and BMPR-IB (also designated ALK-6 and SKR 6), that bind to bone morphogenetic proteins (BMP)-2, BMP-4 and osteogenic protein (OP)-1 (also designated BMP-7). BMPR-IA and BMPR-IB are both expressed in human glioma cell lines. The type II receptor, BMPR-II, efficiently binds to OP-1 and BMP-2 and weakly binds BMP-4, and it is widely expressed in different tissues, including brain. The BMP receptor family members are thought to mediate distinct effects on gene expression, cell differentiation and morphogenesis in a dose dependent fashion.

## REFERENCES

1. ten Dijke, P., et al. 1994. Identification of type I receptors for osteogenic protein-1 and bone morphogenetic protein-4. *J. Biol. Chem.* 269: 16985-16988.
2. Rosenzweig, B.L., et al. 1995. Cloning and characterization of a human type II receptor for bone morphogenetic proteins. *Proc. Natl. Acad. Sci. USA* 92: 7632-7636.
3. Liu, F., et al. 1995. Human type II receptor for bone morphogenetic proteins (BMPs): extension of the two-kinase receptor model to the BMPs. *Mol. Cell. Biol.* 15: 3479-3486.
4. Yamada, N., et al. 1996. Bone morphogenetic protein type IB receptor is progressively expressed in malignant glioma tumours. *Br. J. Cancer* 73: 624-629.
5. Soderstrom, S., et al. 1996. Expression of serine/threonine kinase receptors including the bone morphogenetic factor type II receptor in the developing and adult rat brain. *Cell Tissue Res.* 286: 269-279.
6. Yonemori, K., et al. 1997. Bone morphogenetic protein receptors and Activin receptors are highly expressed in ossified ligament tissues of patients with ossification of the posterior longitudinal ligament. *Am. J. Pathol.* 150: 1335-1347.

## CHROMOSOMAL LOCATION

Genetic locus: BMPR1A (human) mapping to 10q23.2.

## SOURCE

BMPR-IA (7K7) is a mouse monoclonal antibody raised against recombinant full length BMPR-IA protein of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

BMPR-IA (7K7) is recommended for detection of BMPR-IA of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for BMPR-IA siRNA (h): sc-40216, BMPR-IA shRNA Plasmid (h): sc-40216-SH and BMPR-IA shRNA (h) Lentiviral Particles: sc-40216-V.

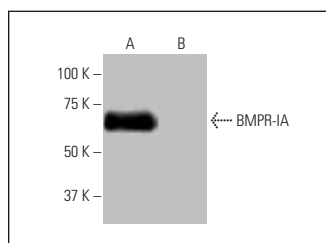
Molecular Weight of BMPR-IA: 66 kDa.

Positive Controls: PC-3 cell lysate: sc-2220 or human BMPR-IA transfected 293T whole cell lysate.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\lambda$  BP-HRP: sc-516132 or m-IgG $\lambda$  BP-HRP (Cruz Marker): sc-516132-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



BMPR-IA (7K7): sc-134285. Western blot analysis of BMPR-IA expression in human BMPR-IA transfected (A) and non-transfected (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Papathanasiou, I., et al. 2012. Bone morphogenetic protein-2-induced Wnt/ $\beta$ -catenin signaling pathway activation through enhanced low-density-lipoprotein receptor-related protein 5 catabolic activity contributes to hypertrophy in osteoarthritic chondrocytes. *Arthritis Res. Ther.* 14: R82.
2. Halloran, D., et al. 2020. Bone morphogenetic protein-2 conjugated to Quantum Dot<sup>®</sup>s is biologically functional. *Nanomaterials* 10: 1208.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.