Datasheet: HCA230Z

Description:	HUMAN ANTI SCLEROSTIN:Preservative Free
Specificity:	SCLEROSTIN
Other names:	SOST
Format:	Preservative Free
Product Type:	Monoclonal Antibody
Clone:	AbD09097_h/mIgG2a
Isotype:	IgG2a
Quantity:	0.1 mg

Product Details

Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

	Yes	No	Not Determined	Suggested Dilution
Immunohistology - Frozen	▪			
Functional Assays	▪			

Where this product has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the product for use in their own system using appropriate negative/positive controls.

Target Species

Human

Species Cross Reactivity

Reacts with: Mouse
N.B. Antibody reactivity and working conditions may vary between species.

Product Form

Chimeric human/mouse IgG2a antibody (kappa light chain) selected from the HuCAL® phage display library and expressed in a human cell line. In this chimeric antibody, the VH and VL domains are human sequence, and all the antibody constant domains are from mouse. Anti-mouse Fc specific antibodies are recommended as secondary detection reagents. This antibody is supplied as a liquid.

Preparation

Purified IgG prepared by affinity chromatography on Protein A

Buffer Solution

Phosphate buffered saline

Preservative Stabilisers

None present

Approx. Protein Concentrations

Total protein concentration 0.5 mg/ml

Immunogen

Recombinant human and murine sclerostin.

External Database Links	**UniProt:** Q9BQB4 Related reagents Q99P68 Related reagents **Entrez Gene:** 50964 SOST Related reagents 74499 Sost Related reagents
Specificity	**Human anti sclerostin, clone AbD09097_h/mIgG2a** specifically recognises human and mouse sclerostin, also known as SOST. Sclerostin is a secreted extracellular matrix protein that is expressed at low levels in bone, bone marrow and cartilage. It may also be detected in other tissues such as kidney and liver. Sclerostin is important in the negative regulation of bone growth with mutations in the sclerostin gene resulting in conditions associated with high bone mass such as sclerosteosis and van Buchem disease. Sclerostin research may facilitate the development of future treatments for diseases associated with bone loss such as osteoporosis (Papapoulos 2011). Sclerostin mediates its inhibitory effect on bone formation by directly blocking the Wnt signaling pathway. In addition, it has been reported that sclerostin may associate with intracellular bone morphogenic protein 7 (BMP7), and block its secretion in osteocytes (Krause *et al.* 2010). Clone AbD09097_h/mIgG2a has been demonstrated to block the binding of sclerostin to the Wnt co-receptors, low density lipoprotein receptor-related protein (LRP) 5 and LRP6 on KS483 cells. In a BAT-luc reporter assay, clone AbD09097_h/mIgG2a showed a significant rescue of the inhibition by Sclerostin on the Wnt3a induced BAT-luc activity. Clone AbD09097_h/mIgG2a was also able to rescue the inhibition by sclerostin on Wnt3a-induced AXIN2 mRNA expression and the sclerostin-mediated inhibition of alkaline phosphatase activity induced by Wnt3a (van Dinther *et al.* 2013). Clone AbD09097_h/mIgG2a is a fully human/mouse chimeric antibody, developed from the inhibitory Fab antibody AbD09097(van Dinther *et al.* 2013).
Affinity	The monovalent intrinsic affinity of AbD09097_h/mIgG2a was measured as K_d = 253 nM to human sclerostin and K_d = 49 nM to mouse sclerostin. Affinity measurements were performed using the ProteOn device (Bio-Rad) on recombinant sclerostin immobilized on an activated ProteOn GLC sensor chip.
References	1. van Dinther, M. *et al.* (2013) Anti-Sclerostin antibody inhibits internalization of Sclerostin and Sclerostin-mediated antagonism of Wnt/LRP6 signaling. PLoS One. 8 (4): e62295. 2. Boschert, V. *et al.* (2015) Crystallization and preliminary X-ray crystallographic analysis of the sclerostin-neutralizing Fab AbD09097. Acta Crystallogr F Struct Biol Commun. 71 (Pt 4): 388-92. 3. Boschert V. *et al.* (2016) The sclerostin-neutralizing antibody AbD09097 recognizes an epitope adjacent to sclerostin's binding site for the Wnt co-receptor LRP6 Open Biology. 6 (8): 160120.
Further Reading	1. Back, J.W. *et al.* (2012) Selecting highly structure-specific antibodies using structured synthetic mimics of the cystine knot protein sclerostin. Protein Eng Des Sel. 25 (5): 251-9. 2. Krause, C. *et al.* (2010) Distinct Modes of Inhibition by Sclerostin on Bone Morphogenetic Protein and Wnt Signaling Pathways. J Biol Chem. 285(53): 41614-26 3. Papapoulos, S.E. (2011) Targeting sclerostin as potential treatment of osteoporosis Ann Rheum Dis. 70 (1): 119-22
Storage	Store at -20°C only. Storage in frost-free freezers is not recommended.

	This product should be stored undiluted. Avoid repeated freezing and thawing as this may denature the antibody.
Shelf Life	12 months from date of despatch
Acknowledgements	Sold under license of U.S. Patents 6753136, 7785859 and 8273688 and corresponding patents. This antibody was developed by Bio-Rad, Zeppelinstr. 4, 82178 Puchheim, Germany.
Health And Safety Information	Material Safety Datasheet documentation #10162 available at: 10162: https://www.bio-rad-antibodies.com/uploads/MSDS/10162.pdf
Licensed Use	For in vitro research purposes only, unless otherwise specified in writing by Bio-Rad.
Regulatory	For research purposes only
Technical Advice	Recommended protocols and further information about HuCAL recombinant antibody technology can be found in the HuCAL Antibodies Technical Manual

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'M311668:171214'

Printed on 01 May 2018

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