

Datasheet: MCA5781GA

BATCH NUMBER 165935

Description:	MOUSE ANTI HUMAN ACTIN ALPHA (SMOOTH MUSCLE)
Specificity:	ACTIN ALPHA (SMOOTH MUSCLE)
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	1A4
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
Flow Cytometry			▪	
Immunohistology - Frozen	▪			1/50 - 1/100
Immunohistology - Paraffin (1)	▪			
ELISA	▪			
Immunoprecipitation			▪	
Western Blotting	▪			
Immunofluorescence	▪			

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.

(1) This product requires antigen retrieval using heat treatment prior to staining of paraffin sections. Sodium citrate buffer pH 6.0 is recommended for this purpose.

Target Species	Human
Species Cross Reactivity	<p>Reacts with: Pig, Rabbit, Rat, Mouse, Sheep</p> <p>N.B. Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information.</p>

Product Form	Purified IgG - liquid
Preparation	Antibody purified from tissue culture supernatant
Buffer Solution	Phosphate buffered saline
Preservative Stabilisers	0.09% Sodium Azide (NaN ₃)
Carrier Free	Yes
Approx. Protein Concentrations	IgG concentration 1 mg/ml
Immunogen	Acetylated N-terminal synthetic decapeptide of alpha smooth muscle actin coupled to KLH.
External Database Links	<p>UniProt: P62736 Related reagents</p> <p>Entrez Gene: 59 ACTA2 Related reagents</p>
Synonyms	ACTSA, ACTVS
Specificity	<p>Mouse anti human actin alpha (smooth muscle) antibody, clone 1A4 recognises alpha smooth muscle actin. Actins are highly conserved proteins that play a role in cell contractile activity, motility, cytokinesis, and in maintaining cell structure. Alpha smooth muscle actin is expressed in vascular smooth muscle, myofibroblasts and myoepithelial cells and also in tumours derived from these cells.</p>
Histology Positive Control Tissue	Smooth muscle in vessels
References	<ol style="list-style-type: none"> Skalli, O. <i>et al.</i> (1986) A monoclonal antibody against alpha-smooth muscle actin: a new probe for smooth muscle differentiation. J Cell Biol. 103 (6 Pt 2): 2787-96. Darby, I. <i>et al.</i> (1990) Alpha-smooth muscle actin is transiently expressed by myofibroblasts during experimental wound healing. Lab Invest. 63: 21-29 Desmoulière, A. <i>et al.</i> (1993) Transforming growth factor-beta 1 induces alpha-smooth muscle actin expression in granulation tissue myofibroblasts and in quiescent and growing cultured fibroblasts. J Cell Biol. 122 (1): 103-11. Hinz, B. <i>et al.</i> (2001) Alpha-smooth muscle actin expression upregulates fibroblast contractile activity. Mol Biol Cell. 12 (9): 2730-41. Hinz, B. <i>et al.</i> (2002) The NH2-terminal peptide of alpha-smooth muscle actin inhibits force generation by the myofibroblast in vitro and in vivo. J Cell Biol. 157 (4): 657-63. Shin, M.O. <i>et al.</i> (2010) Effect of dietary supplementation of grape skin and seeds on liver fibrosis induced by dimethylnitrosamine in rats. Nutr Res Pract. 4: 369-74. Brisset, A.C. <i>et al.</i> (2007) Intimal smooth muscle cells of porcine and human coronary

artery express S100A4, a marker of the rhomboid phenotype *in vitro*. [Circ Res. 100: 1055-62.](#)

8. Chaponnier, C. & Gabbiani, G. (2016) Monoclonal antibodies against muscle actin isoforms: epitope identification and analysis of isoform expression by immunoblot and immunostaining in normal and regenerating skeletal muscle. [F1000Res. 5: 416.](#)

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10. Sievers, H. *et al.* (2020) Pododermal angioarchitecture in the equine hoof wall: A light and scanning electron microscopic study of the wall proper. [Clin Hemorheol Microcirc. 74 \(1\): 21-44.](#)

11. Zheng, Z. *et al.* (2022) *In Vivo*. Inhibition of TRPC6 by SH045 Attenuates Renal Fibrosis in a New Zealand Obese (NZO) Mouse Model of Metabolic Syndrome. [Int J Mol Sci. 23 \(12\): 6870.](#)

Storage	This product is shipped at ambient temperature. It is recommended to aliquot and store at -20°C on receipt. When thawed, aliquot the sample as needed. Keep aliquots at 2-8°C for short term use (up to 4 weeks) and store the remaining aliquots at -20°C. Avoid repeated freezing and thawing as this may denature the antibody. Storage in frost-free freezers is not recommended.
Guarantee	12 months from date of despatch
Health And Safety Information	Material Safety Datasheet documentation #10040 available at: https://www.bio-rad-antibodies.com/SDS/MCA5781GA 10040
Regulatory	For research purposes only

Related Products

Recommended Secondary Antibodies

Goat Anti Mouse IgG (STAR77...)	HRP
Rabbit Anti Mouse IgG (STAR12...)	RPE
Goat Anti Mouse IgG IgA IgM (STAR87...)	Alk. Phos. , HRP
Goat Anti Mouse IgG (STAR76...)	RPE
Goat Anti Mouse IgG (Fc) (STAR120...)	FITC , HRP
Rabbit Anti Mouse IgG (STAR13...)	HRP
Rabbit Anti Mouse IgG (STAR9...)	FITC
Goat Anti Mouse IgG (H/L) (STAR117...)	Alk. Phos. , DyLight®488 , DyLight®550 , DyLight®650 , DyLight®680 , DyLight®800 , FITC , HRP
Goat Anti Mouse IgG (STAR70...)	FITC

Recommended Negative Controls

[MOUSE IgG2a NEGATIVE CONTROL \(MCA929\)](#)

North & South America	Tel: +1 800 265 7376 Fax: +1 919 878 3751 Email: antibody_sales_us@bio-rad.com	Worldwide	Tel: +44 (0)1865 852 700 Fax: +44 (0)1865 852 739 Email: antibody_sales_uk@bio-rad.com	Europe	Tel: +49 (0) 89 8090 95 21 Fax: +49 (0) 89 8090 95 50 Email: antibody_sales_de@bio-rad.com	To find a
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batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets

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