

Datasheet: MCA2543

Description:	MOUSE ANTI HUMAN PODOPLANIN
Specificity:	PODOPLANIN
Other names:	AGGRUS
Format:	Concentrate
Product Type:	Monoclonal Antibody
Clone:	D2-40
Isotype:	IgG1
Quantity:	1 ml

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	▪			1/10 - 1/40
Immunohistology - Paraffin	▪			1/10 - 1/40
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.

Target Species	Human
Product Form	Purified IgG - liquid
Buffer Solution	Phosphate buffered saline
Preservative Stabilisers	0.1% Sodium Azide (NaN ₃) 1% Bovine Serum Albumin
Immunogen	Resected tissue from dysgerminoma of the ovary
External Database Links	UniProt: Q86YL7 Related reagents

Entrez Gene:

[10630](#) PDPN [Related reagents](#)

Synonyms

GP36

RRID

AB_620128

Specificity

Mouse anti human podoplanin antibody, clone D2-40 was raised against M2A antigen ([Marks *et al.*, 1999](#)) and detects podoplanin ([Sonne *et al.*, 2006](#)). Podoplanin (PDPN) is an O-glycosylated transmembrane glycoprotein that is selectively expressed by, and is a marker of, lymphatic endothelial cells. In normal tissue the ~38 kDa protein is also present in human lung, placenta, heart, skeletal muscle and kidney podocytes. It is not found in the blood vasculature ([Breiteneder-Geleff *et al.*, 1999](#), [Wicki and Christofori, 2007](#)).

The function of podoplanin is yet to be fully elucidated; however, it may be involved in cell migration and/or actin cytoskeleton organization. It is required for normal lung cell proliferation and alveolus formation at birth, and can induce platelet aggregation ([Ramirez *et al.*, 2003](#), [Wicki and Christofori, 2007](#)).

Mouse anti human podoplanin antibody, clone D2-40 has been shown to be a sensitive and specific antibody for the detection of lymphatic endothelium in different malignancies, and is of value in the routine evaluation of lymphatic invasion in esophageal cancer ([Kozłowski *et al.*, 2011](#)). Clone D2-40 was reported to be an excellent immunohistochemical marker of cutaneous Kaposi's sarcomas, ([Kahn *et al.*, 2002](#)), and may be useful in the differential diagnosis of epithelioid malignant mesothelioma versus adenocarcinoma ([Chu *et al.*, 2005](#)).

Immunohistology

This product does not require protein digestion pre-treatment of paraffin sections. This product does not require antigen retrieval using heat treatment prior to staining of paraffin sections.

Histology Positive Control Tissue

Human lymph node

References

1. Marks, A. *et al.* (1999) Characterization and distribution of an oncofetal antigen (M2A antigen) expressed on testicular germ cell tumours. [Br J Cancer. 80 \(3-4\): 569-78.](#)
2. Wu, H.M. *et al.* (2013) Expression of podoplanin in salivary gland adenoid cystic carcinoma and its association with distant metastasis and clinical outcomes. [Mol Med Rep. 6: 271-4.](#)
3. Takagi, S. *et al.* (2013) Platelets promote tumor growth and metastasis via direct interaction between Aggrus/podoplanin and CLEC-2. [PLoS One. 8: e73609.](#)
4. Sonne, S.B. *et al.* (2006) Identity of M2A (D2-40) antigen and gp36 (Aggrus, T1A-2, podoplanin) in human developing testis, testicular carcinoma *in situ* and germ-cell tumours. [Virchows Arch. 449 \(2\): 200-6.](#)
5. Heindl, L.M. *et al.* (2010) Intraocular tumor-associated lymphangiogenesis a novel prognostic factor for ciliary body melanomas with extraocular extension. [Ophthalmology 117\(2\): 334-42.](#)

6. Ekwall, A.K. *et al.* (2011) The tumour-associated glycoprotein podoplanin is expressed in fibroblast-like synoviocytes of the hyperplastic synovial lining layer in rheumatoid arthritis. [Arthritis Res Ther. 13:R40.](#)
7. Kozłowski, M. *et al.* (2011) Lymphatic vessel invasion detected by the endothelial lymphatic marker D2-40 (podoplanin) is predictive of regional lymph node status and an independent prognostic factor in patients with resected esophageal cancer. [Folia Histochem Cytobiol. 49: 90-7.](#)
8. Rudzińska, M. *et al.* (2014) The role of podoplanin in the biology of differentiated thyroid cancers. [PLoS One. 9: e96541.](#)
9. Bolzoni Villaret, A. *et al.* (2010) Immunostaining patterns of CD31 and podoplanin in previously untreated advanced oral/oropharyngeal cancer: prognostic implications. [Head Neck. 32: 786-92.](#)
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11. Heindl, L.M. *et al.* (2009) Intraocular lymphangiogenesis in malignant melanomas of the ciliary body with extraocular extension. [Invest Ophthalmol Vis Sci. 50: 1988-95.](#)
12. Mittal, S. *et al.* (2013) Lymphoid aggregates that resemble tertiary lymphoid organs define a specific pathological subset in metal-on-metal hip replacements. [PLoS One. 8 \(5\): e63470.](#)
13. Wessel, J.M. *et al.* (2012) Invasion of lymphatic vessels into the eye after open globe injuries. [Invest Ophthalmol Vis Sci. 53: 3717-25.](#)
14. Heindl, L.M. *et al.* (2011) Tumor-associated lymphangiogenesis in the development of conjunctival melanoma. [Invest Ophthalmol Vis Sci. 52: 7074-83.](#)
15. Bolzoni Villaret, A. *et al.* (2013) Angiogenesis and lymphangiogenesis in early-stage laryngeal carcinoma: Prognostic implications. [Head Neck. 35: 1132-7.](#)
16. Heindl, L.M. *et al.* (2011) Prognostic significance of tumor-associated lymphangiogenesis in malignant melanomas of the conjunctiva. [Ophthalmology. 118: 2351-60.](#)
17. Miyata, K. *et al.* (2014) Suppression of Aggrus/podoplanin-induced platelet aggregation and pulmonary metastasis by a single-chain antibody variable region fragment. [Cancer Med. 3 \(6\): 1595-604.](#)
18. Choi, I.Y. *et al.* (2017) Stromal cell markers are differentially expressed in the synovial tissue of patients with early arthritis. [PLoS One. 12 \(8\): e0182751.](#)

Storage	<p>Store at +4°C or at -20°C if preferred.</p> <p>Storage in frost-free freezers is not recommended.</p> <p>This product should be stored undiluted. Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.</p>
Guarantee	<p>Guaranteed for 12 months from the date of despatch or until the date of expiry, whichever comes first. Please see label for expiry date.</p>
Health And Safety Information	<p>Material Safety Datasheet documentation #10041 available at: 10041: https://www.bio-rad-antibodies.com/uploads/MSDS/10041.pdf</p>
Regulatory	<p>For research purposes only</p>

Related Products

Recommended Secondary Antibodies

Goat Anti Mouse IgG IgA IgM (STAR87...)	Alk. Phos. , HRP
Goat Anti Mouse IgG (STAR77...)	HRP
Rabbit Anti Mouse IgG (STAR12...)	RPE
Rabbit Anti Mouse IgG (STAR8...)	DyLight@800
Rabbit Anti Mouse IgG (STAR13...)	HRP
Goat Anti Mouse IgG (STAR76...)	RPE
Goat Anti Mouse IgG (STAR70...)	FITC
Goat Anti Mouse IgG (Fc) (STAR120...)	FITC , HRP
Goat Anti Mouse IgG (H/L) (STAR117...)	Alk. Phos. , DyLight@488 , DyLight@680 , DyLight@800 , FITC , HRP
Rabbit Anti Mouse IgG (STAR9...)	FITC

Recommended Negative Controls

[MOUSE IgG1 NEGATIVE CONTROL \(MCA928\)](#)

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
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