

Antibody to confirm stem cell quality New ES/iPS Cell Marker

Source: Dr. Toshiyuki Kawasaki, Research Center for Glycobiotechnology of Ritsumeikan Univ.

Anti KS (Keratan Sulfate) Monoclonal Antibody Clone R-10G recognizes KS lacking oversulfated structures on podocalyxin

Anti-KS monoclonal antibody clone R-10G is a powerful new tool for the evaluation and standardization of pluripotent human ES (hES) and human iPS (hiPS) cells for regenerative medicine research. mAb R-10G reacts strongly and specifically with an epitope present on hES and hiPS cells that, importantly and in contrast to several other commonly used stem cell markers, is not present on present on hEC cells. As the R-10G epitope has been determined as keratan sulfate lacking oversulfated structures (sulfation at C-6 of Gal residues), clone R-10G will also be valuable to determine the functional roles of glycans on pluripotent stem cells.

Clone R-10G Features

- Specific for hES/hiPS cells
- Non-reactive with EC cells (compare vs. TRA-1-60 antibody)
- Recognizes an epitope on low sulfated keratan sulfate associated with podocalyxin (compare vs. anti-KS clones 5D4 and BCD4)

References

- 1) Kawabe *et al*, *Glycobiology*. 2013 Mar; 23(3): 322-36.
- 2) Schopperle WM, *et al*, *Stem Cells*. 2007 Mar; 25(3): 723-30.

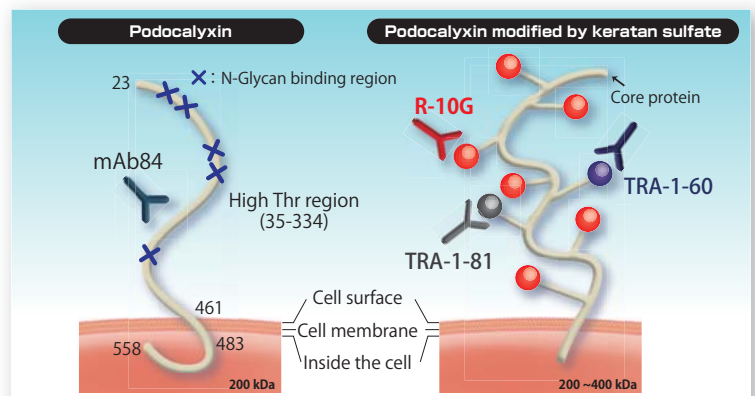


Figure 1. Pluripotent cell epitope on the podocalyxin molecular structure

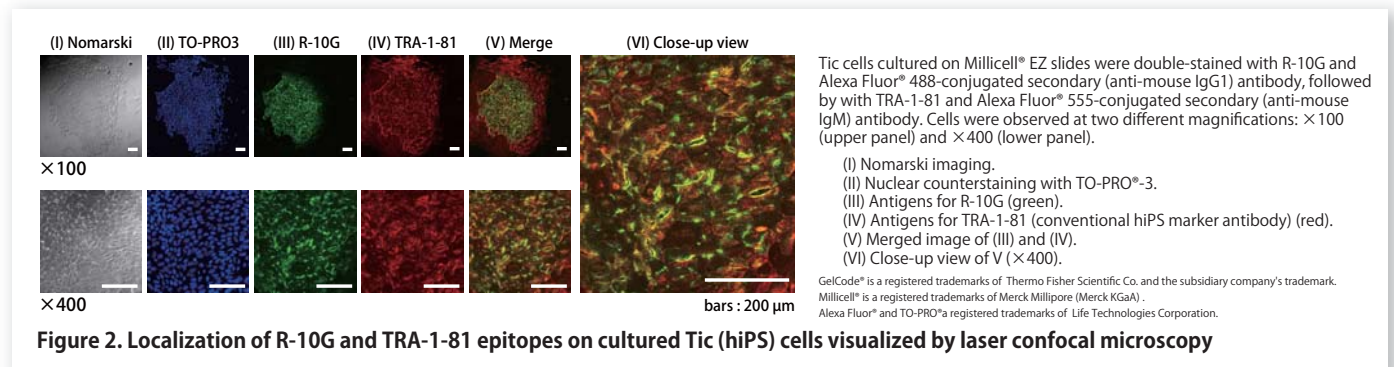


Figure 2. Localization of R-10G and TRA-1-81 epitopes on cultured Tic (hiPS) cells visualized by laser confocal microscopy

Comparison of R-10G antibody and ES/iPS markers

Antibody	Tic (iPS cells)	KhES-3 (ES cells)	2102Ep (EC cells)	Epitope	Immunogen
R-10G	+++	+++	+	Low sulfated keratan sulfate	Human iPS cell (Tic)
SSEA-3	+++	+++	+++	Globo series glycolipid (3GalINac β 1-3Gal α 1-4Gal)	Mouse Embryo (4-8 cell stage)
SSEA-4	+++	++++	+++	Globo series glycolipid (NeuAc α 2-3Gal β 1-3GalINac)	EC cells (2102Ep)
TRA-1-60	++++	++++	++++	Keratan sulfate on podocalyxin (sialic acid related)	EC cells (2102Ep)
TRA-1-81	++++	++++	++++	Keratan sulfate on podocalyxin	EC cells (2102Ep)

iPS cell: induced pluripotent stem cells

ES cells: embryonic stem cells

*Please refer to Reference#2 regarding TRA-1-60, TRA-1-81

Description	Immunized Animal	Cross Reactivity	Application	Cat. No.	Size
Anti Keratan Sulfate (R-10G)	Mouse (R-10G)	Human	WB, IF, IC	CAC-RIT-M001	100 μL

Application WB: Western Blot IC: Immunocytochemistry IF: Immunofluorescence

Glycoprotein Antibody Series

Proteoglycan Detection Antibodies

Description	Host Species	Confirmed Reactivity	Applications	Cat. No.	Size
Chondroitin Sulfate Proteoglycan					
Anti CS [Chondroitin Sulfate] Monoclonal Antibody	MS (2B6)	All	WB/IHC/ELISA	CAC-PRPG-BC-M02	1 mL
Anti CS [Chondroitin Sulfate] Monoclonal Antibody	MS (1B5)	All	WB/IHC	CAC-PRPG-BC-M03	1 mL
Anti CS [Chondroitin Sulfate] Monoclonal Antibody	MS (3B3)	All	IHC/ELISA	CAC-PRPG-BC-M04	1 mL
Anti Chondroitin Sulfate A Monoclonal Antibody	MS (2H6)	RAT/Animal	WB/ELISA/IP/IHC(f)/IHC(p)	CAC-NU-07-001	200 µL
Anti Aggrecan Monoclonal Antibody	MS (6F4)	HU	WB/IHC(p)/ELISA/IP	CAC-PRPG-AG-M01	2 mL
Anti Aggrecan Monoclonal Antibody	MS (5D3)	HU/BOV	WB/IHC(p)/ELISA/IP	CAC-PRPG-AG-M02	2 mL
Anti Aggrecan Monoclonal Antibody	MS (5G2)	HU	WB/IHC/ELISA/IP	CAC-PRPG-AG-M03	2 mL
Anti Aggrecan Monoclonal Antibody	MS (7B7)	HU	WB/IHC/ELISA/IP	CAC-PRPG-AG-M04	2 mL
Anti Versican/CSPG2 Monoclonal Antibody	MS (5C12)	HU	WB/IHC(f)/ELISA	CAC-PRPG-VS-M01	2 mL
Anti Versican/CSPG2 Monoclonal Antibody	MS (4C5)	HU	WB/IHC(f)/ELISA	CAC-PRPG-VS-M02	2 mL
Anti Versican/CSPG2 Monoclonal Antibody	MS (2B3)	HU/BOV	WB/ELISA/IHC	CAC-PRPG-VS-M03	2 mL
Anti Versican/CSPG2 Monoclonal Antibody	MS (6B10)	HU/BOV	WB/ELISA/IHC	CAC-PRPG-VS-M04	2 mL
Anti Decorin Monoclonal Antibody	MS (889C7)	HU/BOV	WB/IHC(p)/ELISA	CAC-PRPG-DC-M01	2 mL
Anti Biglycan Monoclonal Antibody	MS (905A7)	HU	IHC(p)/ELISA/IP	CAC-PRPG-BG-M01	2 mL
Anti Fibromodulin Monoclonal Antibody	MS (636B12)	HU	WB/IHC	CAC-PRPG-FBM-M01	2 mL
Nerve-related Proteoglycan					
Anti Neurocan Monoclonal Antibody	MS (1G2)	RAT	WB/ELISA/IP/IHC(f)/IHC(p)	CAC-NU-07-002	200 µL
Anti Neuroglycan C Monoclonal Antibody	MS (C1)	RAT	WB/IP/IHC(f)/IHC(p)	CAC-NU-07-003	200 µL
Anti Neurocan Peptides Polyclonal Antibody	RAB	MS/RAT	WB/IHC(p)	CAC-NU-07-005	200 µL
Anti NG2 / CSPG4 Monoclonal Antibody	MS (2161D7)	HU	WB/IHC/ELISA/FC	CAC-PRPG-NG-M01	2 mL
Transmembrane type Heparan Sulfate Proteoglycan (HSPG)					
Anti N-syndecan Polyclonal Antibody	RAB	MS/RAT	WB/IHC(p)	CAC-NU-07-004	100 µL
Keratan Sulfate					
Anti Keratan Sulfate Monoclonal Antibody	RAT (373E1)	ALL	WB/IHC(p)/ELISA/FC/IP	CAC-PRPG-KS-M01	2 mL
Anti Keratan Sulfate Monoclonal Antibody	MS (5D4)	ALL	WB/IHC	CAC-PRPG-BC-M01	1 mL
Matrix protein					
Anti BPAG1(BP230) Monoclonal Antibody	MS (279)	HU/RAT/BOV/RAB/POR	WB/IF	CAC-NU-01-BP1	500 µL
Anti Laminin α 4 Monoclonal Antibody	MS (652C4)	HU	IHC(f)/IP	CAC-PRPG-LA4-M01	2 mL
Anti Laminin α 3 Monoclonal Antibody	MS (BM515)	HU/BOV/RAB	WB/IF/IP	CAC-NU-01-LA3	500 µL
Anti Collagen 7 Monoclonal Antibody	MS (BML39)	HU/BOV/RAB/POR	WB/IF/IP	CAC-NU-01-CO7	500 µL
Anti Collagen 12 Monoclonal Antibody	MS (378D5)	HU	WB/IHC(p)/ELISA/IP	CAC-PRPG-CO12-M01	2 mL
Anti Integrin α 6 Monoclonal Antibody	MS (537D5)	HU	WB/IC	CAC-PRPG-ITG-M01	20 µL
Arthrosis Marker					
Anti COMP Monoclonal Antibody	RAT (484D1)	HU	WB/IHC(p)/ELISA	CAC-PRPG-CP-M01	2 mL
Anti COMP Monoclonal Antibody	RAT (490D11)	HU	WB/IHC/ELISA	CAC-PRPG-CP-M02	2 mL
Anti COMP Fragment Monoclonal Antibody	MS (2127F5)	HU	WB/IHC(p)/ELISA/IP	CAC-PRPG-CPF-M02	2 mL
Anti COMP Fragment Monoclonal Antibody	MS (2117B2)	HU	WB/IHC(f)/ELISA	CAC-PRPG-CPF-M01	2 mL
RhoGAP family					
Anti XTP1 Monoclonal Antibody	MS (2191H1)	-	WB/IHC	CAC-PRPG-XTP-M01	2 mL
Anti SDP35 Monoclonal Antibody	MS (2200D12)	-	WB/IHC	CAC-PRPG-SDP-M01	2 mL
Basement membrane protein binding Type IV Collagen					
Anti Laminin-nidogen complexe Monoclonal Antibody	MS (331G3)	HU	IHC(f)/ELISA/IC	CAC-PRPG-NDG-M01	2 mL

Animal species BOV: Bovine HU: Human MS: Mouse POR: Porcine RAB: Rabbit RAT: Rat

Application FC: Flow Cytometry IC: Immunocytochemistry IF: Immunofluorescence IHC(f): IHC frozen section IHC(p): IHC paraffin section
IP: Immunoprecipitation WB: Western Blot

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COSMO BIO Co., LTD.

TOYO EKIMAE BLDG. 2-20, TOYO 2-CHOME,
KOTO-KU, TOKYO 135-0016, JAPAN
TEL : (81)3-5632-9617
FAX : (81)3-5632-9618
e-mail : export@cosmobio.co.jp
URL : www.cosmobio.com



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