COSMO BIO CO., LTD.
Inspiration for Life Science

MONOCLONAL ANTIBODY

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Catalog No. RIT-M001

Anti KS [Keratan Sulfate] (R-10G)

- lacking oversulfated structures -

BACKGROUND

Monoclonal antibody R-10G recognises Keratan Sulfate lacking oversulfated structures in oligosaccharide segments of Keratan Sulfate glycosaminoglycan chains on hiPS cells.Digestion with Keratanase II, Keratanase or Endo-β-galactosidase removes these epitopes from Keratan Sulfate proteoglycans.
R-10G is useful as a potent tool for the evaluation and standardization of hiPS cells in regenerative medicine.

Product type	Primary antibodies
Immunogen	Human iPS cell (Tic)
Host Species	Mouse (C57BL/6)
Fusion Partner	P3U1
Clone Designation	R-10G
Isotype	IgG1
Source	Ascites
Purification	Affinity purified by Protein G
Form	Liquid
Formulation Buffer	Phosphate buffered saline. *NOTE:PBS doesn't contain preservative.Preservative is added based on the research purpose
Concentration	1 mg / mL
Volume	100 ul
Label	Unlabeled
Specificity	R-10G epitopes are oligosaccharide segments of Keratan Sulfate glycosaminoglycan chains consisting of disaccharide-repeating units with galactose and 6-sulfated *N*-acetyl-glucosamine, lacking oversulfated structures. Digestion with Keratanase II, Keratanase or Endo-β-galactosidase removes these epitopes from Keratan Sulfate glycosaminoglycan chains. **R-10G epitopes are expressed on human iPS/ES cells but not on human EC cells**.
Cross species reactivity	Human, Other species have not been tested.
Storage Conditions	Store at -70°C. Aliquot to avoid cycles of freeze / thaw.

Application notes
Recommended dilutions

- **Western blotting** : 3 µg / mL
- **Immunofluorescence** : 10 µg / mL

Other applications have not been tested.
Optimal dilutions/concentrations should be determined by the end user.

References

1) Kawabe K, Tateyama D, Toyoda H, Kawasaki N, Hashii N, Nakao H, Matsumoto S, Nonaka M, Matsumura H, Hirose Y, Morita A, Katayama M, Sakuma M, Kawasaki N, Furue MK, and Kawasaki T (2013). A novel antibody for human-induced pluripotent stem cells and embryonic stem cells recognizes a type of keratan sulfate lacking oversulfated structures. Glycobiology 23 (3), 322–336. PubMed: 23154990

[ANTIBODY CHARACTERIZATION]

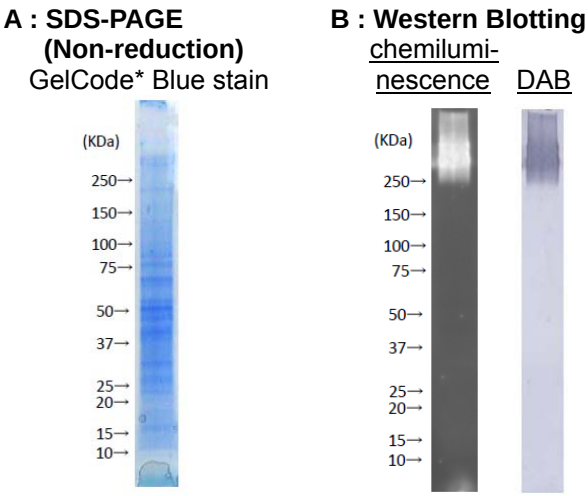

Fig.1 Screening of R-10G mAb by western blotting. Tic cell lysates in the complete RIPA buffer were desolved by SDS-PAGE on a 4-15% gradient gel under nonreducing, followed by immunoblot detection with R-10G.
A : GelCode* Blue staining of SDS-PAGE of the Tic cell lysates (10ug protein)**.**
B : Tic cell lysates were analyzed by western blotting with R-10G.
The molecular mass markers are shown on the left.

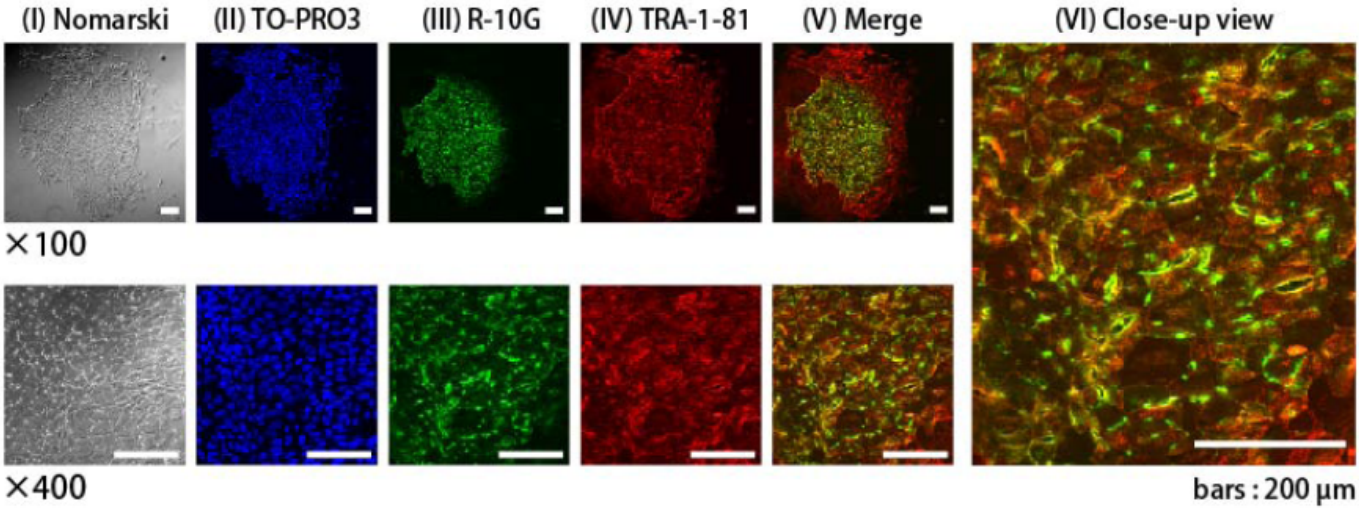

Fig. 2. Localization of the R-10G and TRA-1-81 epitopes on cultured Tic cells visualized on laser confocal microscopy. Tic cells cultured on Millicell* EZ slides were double-stained first with R-10G and Alexa Fluor 488-conjugated secondary (anti-mouse IgG1) antibody, followed by with TRA-1-81 and Alexa Fluor 555-conjugated secondary (anti-mouse IgM) antibody. Cells were observed at two different magnifications: ×100 (upper panel) and ×400 (lower panel).
(I) Nomarski imaging. **(II)** Nuclear counterstaining with TO-PRO*-3. **(III)** Antigens for R-10G (green). **(IV)** Antigens for TRA-1-81 (conventional hiPS marker antibody) (red). **(V)** Merged image of (III) and (IV). **(VI)** Close-up view of V (×400).

GelCode* is Thermo Fisher Scientific Co. and the subsidiary company's trademark.
Millicell* is a Merck Millipore ®
TO-PRO* is a Molecular Probes ®

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