COSMO BIO CO., LTD.
Inspiration for Life Science

**MONOCLONAL ANTIBODY**

*For research use only, Not for diagnostic use.*

**Catalog No. RIT-M001**

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

## - KS 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 antibody |
| **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.<br>*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, *et al*, A novel antibody for human-induced pluripotent stem cells and embryonic stem cells recognizes a type of keratan sulfate lacking oversulfated structures.
Glycobiology. 2013 Mar;23(3):322-36. PubMed: 23154990
2) Schopperle WM, *et al*, The TRA-1-60 and TRA-1-81 human pluripotent stem cell markers are expressed on podocalyxin in embryonal carcinoma.
Stem Cells. 2007 Mar;25(3):723-30. PMID: 17124010
3) 川嵜敏祐等 実験医学, 30(10), 129-133 (2013)

**[ ANTIBODY CHARACTERIZATION ]**

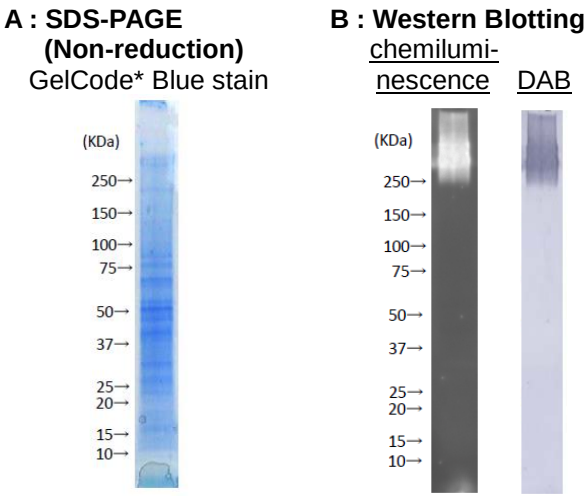


**Fig.1 Screening of R-10G mAb by western blotting.** Tic cell lysates in the complete RIPA buffer were resolved by SDS-PAGE on a 4-15% gradient gel under nonreducing conditions, followed by immunoblot detection with R-10G.
**A :** GelCode* Blue staining of SDS-PAGE of the Tic cell lysates (10ug protein)**.**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

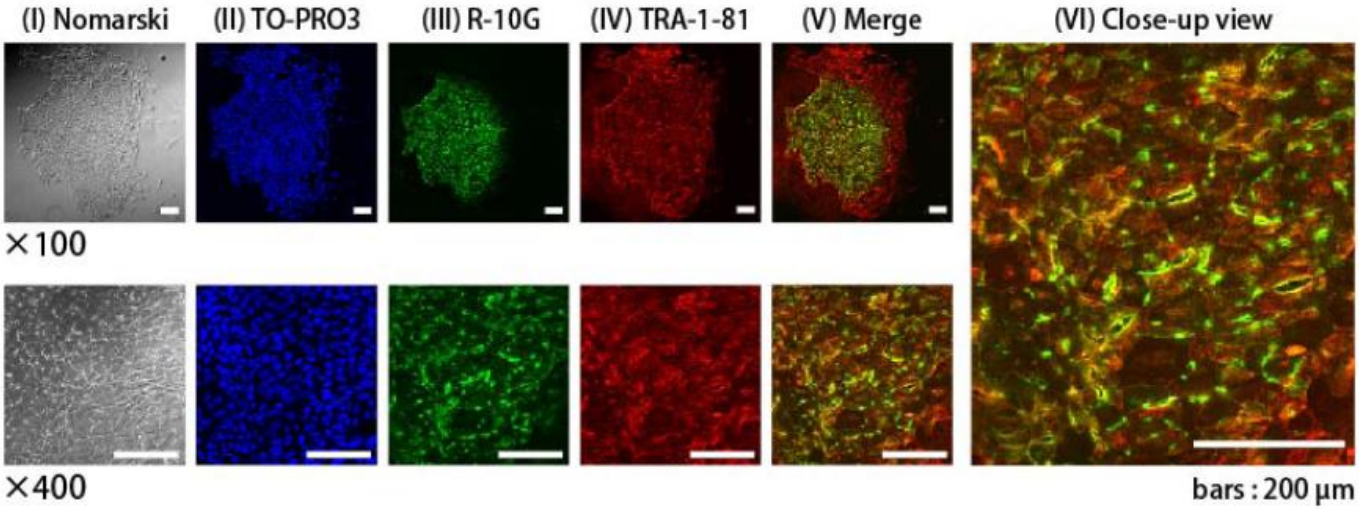


**Fig. 2. Localization of the R-10G and TRA-1-81 epitopes on cultured Tic cells visualized on laser confocal microscopy.**Tic cells cultured on Millicell* EZ slides were double-stained first with R-10G and Alexa Fluor 488-conjugated secondary (anti-mouse IgG1) antibody, followed by with TRA-1-81 and 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 ®

*For research use only, Not for diagnostic use.*

COSMO BIO CO., LTD.
【JAPAN】
TOYO EKIMAE BLDG. 2-20, TOYO 2-CHOME,
KOTO-KU. TOKYO 135-0016, JAPAN
Phone: +81-3-5632-9610
FAX: +81-3-5632-9619
URL: https://www.cosmobio.co.jp/

COSMO BIO USA
【Outside Japan】
2792 Loker Ave West, Suite 101
Carlsbad, CA 92010, USA
email: info@cosmobiousa.com
Phone/FAX: (+1) 760-431-4600
URL: www.cosmobiousa.com