

UT-B (N-20): sc-85205

BACKGROUND

The Kidd antigen system (also referred to as the JK antigen system) exists on the membrane of red blood cells (erythrocytes) and is responsible for urea transport and blood type determination. On the surface of red blood cells, JK antigens (which exist as two alleles, designated JK^a and JK^b) are associated with a protein, known as UT-B, whose function is to mediate urea transport in kidneys and erythrocytes. UT-B, also known as SLC14A (solute carrier family 14 (urea transporter), member 1 (Kidd blood group)), JK, UT1, UTE, HUT11 or RACH1, is a 389 amino acid multi-pass membrane protein that exists as a low-affinity urea transporter and is responsible for determination of JK alleles. The gene encoding UT-B maps to human chromosome 18, which houses over 300 protein-coding genes and contains nearly 76 million bases.

REFERENCES

- Geitvik, G.A., Hoyheim, B., Gedde-Dahl, T., Grzeschik, K.H., Lothe, R., Tomter, H. and Olaisen, B. 1987. The Kidd (JK) blood group locus assigned to chromosome 18 by close linkage to a DNA-RFLP. *Hum. Genet.* 77: 205-209.
- Olives, B., Neau, P., Bailly, P., Hediger, M.A., Rousselet, G., Cartron, J.P. and Ripoche, P. 1994. Cloning and functional expression of a urea transporter from human bone marrow cells. *J. Biol. Chem.* 269: 31649-31652.
- Olivès, B., Mattei, M.G., Huet, M., Neau, P., Martial, S., Cartron, J.P. and Bailly, P. 1995. Kidd blood group and urea transport function of human erythrocytes are carried by the same protein. *J. Biol. Chem.* 270: 15607-15610.
- Olivès, B., Martial, S., Mattei, M.G., Matassi, G., Rousselet, G., Ripoche, P., Cartron, J.P. and Bailly, P. 1996. Molecular characterization of a new urea transporter in the human kidney. *FEBS Lett.* 386: 156-160.
- Olivès, B., Merriman, M., Bailly, P., Bain, S., Barnett, A., Todd, J., Cartron, J.P. and Merriman, T. 1997. The molecular basis of the Kidd blood group polymorphism and its lack of association with type 1 diabetes susceptibility. *Hum. Mol. Genet.* 6: 1017-1020.
- Lucien, N., Sidoux-Walter, F., Olivès, B., Moulds, J., Le Pennec, P.Y., Cartron, J.P. and Bailly, P. 1998. Characterization of the gene encoding the human Kidd blood group/urea transporter protein. Evidence for splice site mutations in Jknull individuals. *J. Biol. Chem.* 273: 12973-12980.
- Sidoux-Walter, F., Lucien, N., Olivès, B., Gobin, R., Rousselet, G., Kamsteeg, E.J., Ripoche, P., Deen, P.M., Cartron, J.P. and Bailly, P. 1999. At physiological expression levels the Kidd blood group/urea transporter protein is not a water channel. *J. Biol. Chem.* 274: 30228-30235.
- Inoue, H., Jackson, S.D., Vikulina, T., Klein, J.D., Tomita, K. and Bagnasco, S.M. 2004. Identification and characterization of a Kidd antigen/UT-B urea transporter expressed in human colon. *Am. J. Physiol., Cell Physiol.* 287: C30-C35.

CHROMOSOMAL LOCATION

Genetic locus: SLC14A1 (human) mapping to 18q12.3.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

SOURCE

UT-B (N-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the N-terminus of UT-B of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-85205 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

UT-B (N-20) is recommended for detection of UT-B of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for UT-B siRNA (h): sc-76877, UT-B shRNA Plasmid (h): sc-76877-SH and UT-B shRNA (h) Lentiviral Particles: sc-76877-V.

Molecular Weight (predicted) of UT-B: 43 kDa.

Molecular Weight (observed) of UT-B: 40 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or HEL 92.1.7 cell lysate: sc-2270.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.