

UPLa (N-16): sc-15170

BACKGROUND

The asymmetric unit membrane (AUM) forms numerous plaques, which cover the apical surface of the urothelium. These plaques are thought to strengthen the urothelium and reduce the risk of rupturing during ladder distention. They are composed of four major integral membrane proteins called uroplakins (UP). The uroplakin family comprises UPLa, UPLb, UPLII, and UPLIII. Family members are conserved among several species, including human, mouse, rat, rabbit, canine, porcine and ovine. UPLa and UPLb form tightly packed structures with UPLII and UPLIII, respectively. This pairing is required for normal urothelial plaque formation and is regulated by proteolytic processing of the uroplakin proteins. Uroplakins are expressed in normal urothelium and are used as specific markers of urothelial differentiation. They are also expressed in a majority of transitional cell carcinomas of the bladder (TCCs), which make the uroplakins a useful marker for detecting bladder cancer metastasis and for staging and monitoring chemotherapeutic response.

REFERENCES

1. Lin, J.H., et al. 1994. Precursor sequence, processing and urothelium-specific expression of a major 15 kDa protein subunit of asymmetric unit membrane. *J. Biol. Chem.* 269: 1775-1784.
2. Wu, X.R., et al. 1994. Mammalian uroplakins. A group of highly conserved urothelial differentiation-related membrane proteins. *J. Biol. Chem.* 269: 13716-13724.
3. Wu, X.R., et al. 1995. Selective interactions of UPLa and UPLb, two members of the transmembrane 4 superfamily, with distinct single transmembrane-domained proteins in differentiated urothelial cells. *J. Biol. Chem.* 270: 29752-29759.
4. Li, S.M., et al. 1999. Detection of circulating uroplakin-positive cells in patients with transitional cell carcinoma of the bladder. *J. Urol.* 162: 931-935.
5. Shapiro, E., et al. 2000. Uroplakin and androgen receptor expression in the human fetal genital tract: insights into the development of the vagina. *J. Urol.* 164: 1048-1051.
6. Hu, P., et al. 2000. Ablation of uroplakin III gene results in small urothelial plaques, urothelial leakage, and vesicoureteral reflux. *J. Cell Biol.* 151: 961-972.
7. Liang, F.X., et al. 2001. Organization of uroplakin subunits: transmembrane topology, pair formation and plaque composition. *Biochem. J.* 355: 13-18.

CHROMOSOMAL LOCATION

Genetic locus: UPK1A (human) mapping to 19q13.12; Upk1a (mouse) mapping to 7 B1.

SOURCE

UPLa (N-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of UPLa of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-15170 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

UPLa (N-16) is recommended for detection of UPLa of mouse, rat and 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).

UPLa (N-16) is also recommended for detection of UPLa in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for UPLa siRNA (h): sc-41090, UPLa siRNA (m): sc-41091, UPLa shRNA Plasmid (h): sc-41090-SH, UPLa shRNA Plasmid (m): sc-41091-SH, UPLa shRNA (h) Lentiviral Particles: sc-41090-V and UPLa shRNA (m) Lentiviral Particles: sc-41091-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (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.