SANTA CRUZ BIOTECHNOLOGY, INC.

UPII (N-18): sc-15178

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 UPIa, UPIb, UPII, and UPIII. Family members are conserved among several species, including human, mouse, rat, rabbit, dog, pig and sheep. UPIa and UPIb form tightly packed structures with UPII and UPIII, 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.

CHROMOSOMAL LOCATION

Genetic locus: UPK2 (human) mapping to 11q23.3; Upk2 (mouse) mapping to 9 A5.2.

SOURCE

UPII (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of UPII (uroplakin II) of human origin.

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-15178 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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

APPLICATIONS

UPII (N-18) is recommended for detection of UPII of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

UPII (N-18) is also recommended for detection of UPII in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for UPII siRNA (h): sc-41094, UPII siRNA (m): sc-41095, UPII shRNA Plasmid (h): sc-41094-SH, UPII shRNA Plasmid (m): sc-41095-SH, UPII shRNA (h) Lentiviral Particles: sc-41094-V and UPII shRNA (m) Lentiviral Particles: sc-41095-V.

Molecular Weight of mature UPII: 15 kDa.

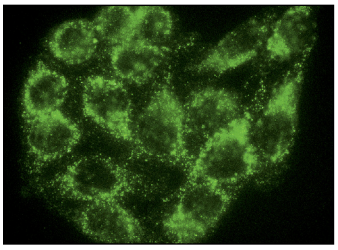
Molecular Weight of UPII precursor: 19 kDa.

Molecular Weight of glycosylated UPII precursor: 28 kDa.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



UPII (N-18): sc-15178. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Schnegelsberg, B., et al. 2010. Overexpression of NGF in mouse urothelium leads to neuronal hyperinnervation, pelvic sensitivity, and changes in urinary bladder function. Am. J. Physiol. Regul. Integr. Comp. Physiol. 298: R534-R547.
2. Shi, J.G., et al. 2012. Tissue engineering of ureteral grafts by seeding urothelial differentiated hADSCs onto biodegradable ureteral scaffolds. J. Biomed. Mater. Res. A 100: 2612-2622.