SANTA CRUZ BIOTECHNOLOGY, INC.

UPIb (1E1): sc-517025

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, canine, porcine and dvine. 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.
3. Wu, X.R., et al. 1995. Selective interactions of UPIa and UPIb, 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: UPK1B (human) mapping to 3q13.32; Upk1b (mouse) mapping to 16 B4.

SOURCE

UPIb (1E1) is a mouse monoclonal antibody raised against amino acids 131-228 representing partial length UPIb of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

UPIb (1E1) is recommended for detection of UPIb 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

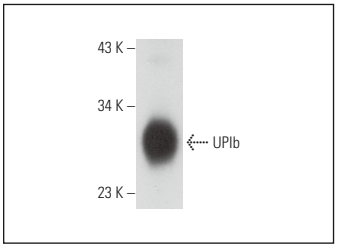
Suitable for use as control antibody for UPIb siRNA (h): sc-41092, UPIb siRNA (m): sc-41093, UPIb shRNA Plasmid (h): sc-41092-SH, UPIb shRNA Plasmid (m): sc-41093-SH, UPIb shRNA (h) Lentiviral Particles: sc-41092-V and UPIb shRNA (m) Lentiviral Particles: sc-41093-V.

Positive Controls: mouse bladder extract: sc-364919.

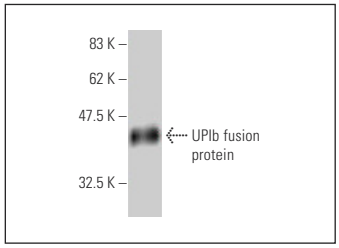
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



UPIb (1E1): sc-517025. Western blot analysis of UPIb expression in mouse bladder tissue extract.



UPIb (1E1): sc-517025. Western blot analysis of human recombinant UPIb fusion protein.

SELECT PRODUCT CITATIONS

1. Odom, M.R., et al. 2022. Diabetes causes NLRP3-dependent barrier dysfunction in mice with detrusor overactivity but not underactivity. Am. J. Physiol. Renal Physiol. 323: F616-F632.

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 for detailed protocols and support products.