SANTA CRUZ BIOTECHNOLOGY, INC.

UPIIIa (C-6): sc-166808

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 bladder 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 ovine. 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: UPK3A (human) mapping to 22q13.31; Upk3a (mouse) mapping to 15 E2.

SOURCE

UPIIIa (C-6) is a mouse monoclonal antibody raised against amino acids 21-200 mapping near the N-terminus of UPIIIa of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

UPIIIa (C-6) is available conjugated to agarose (sc-166808 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166808 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166808 PE), fluorescein (sc-166808 FITC), Alexa Fluor® 488 (sc-166808 AF488), Alexa Fluor® 546 (sc-166808 AF546), Alexa Fluor® 594 (sc-166808 AF594) or Alexa Fluor® 647 (sc-166808 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166808 AF680) or Alexa Fluor® 790 (sc-166808 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

UPIIIa (C-6) is recommended for detection of UPIIIa of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for UPIIIa siRNA (h): sc-41096, UPIIIa siRNA (m): sc-41097, UPIIIa shRNA Plasmid (h): sc-41096-SH, UPIIIa shRNA Plasmid (m): sc-41097-SH, UPIIIa shRNA (h) Lentiviral Particles: sc-41096-V and UPIIIa shRNA (m) Lentiviral Particles: sc-41097-V.

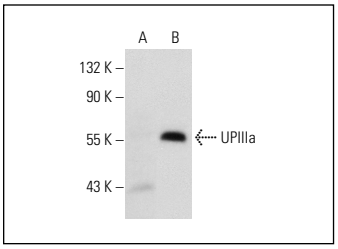
Molecular Weight of UPIIIa: 47 kDa.

Positive Controls: UPIIIa (h): 293T Lysate: sc-158053 or mouse bladder extract: sc-364919.

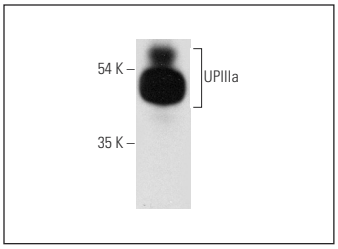
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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). 3) Immunofluorescence: use m-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



UPIIIa (C-6): sc-166808. Western blot analysis of UPIIIa expression in non-transfected: sc-117752 (**A**) and human UPIIIa transfected: sc-158053 (**B**) 293T whole cell lysates.



UPIIIa (C-6): sc-166808. Western blot analysis of UPIIIa expression in mouse bladder tissue extract.

SELECT PRODUCT CITATIONS

1. Santos, C.P., et al. 2019. Urothelial organoids originating from Cd49f^{high} mouse stem cells display Notch-dependent differentiation capacity. Nat. Commun. 10: 4407.
2. Sharma, K., et al. 2021. Early invasion of the bladder wall by solitary bacteria protects UPEC from antibiotics and neutrophil swarms in an organoid model. Cell Rep. 36: 109351.

RESEARCH USE

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