



## TECHNOLOGY

# Monoclonal antibodies to polycystin-1 protein

## OVERVIEW

Polycystin-1 (PC1) is a protein encoded by the Polycystic Kidney Disease 1 (PKD1) gene. It induces resistance to apoptosis and spontaneous proliferation of kidney tubular epithelial cells. Autosomal dominant polycystic kidney disease (ADPKD) is a genetic disease that results in formation of fluid filled cysts in the kidney. As the disease progresses, the number and size of cysts increases and eventually, PKD patients develop kidney failure and high blood pressure. Mutations in PKD1 are responsible for more than 80% of all ADPKD cases.

PC1 is an eleven transmembrane glycoprotein that is cis-autoproteolytically cleaved at juxtamembrane extracellular GPS/GAIN *in vivo*, resulting in an N-terminal cleavage fragment and a C-terminal cleavage fragment in the kidney and other tissues.

UMB inventors have generated two mouse monoclonal antibodies (E3 and E4) and a rat monoclonal antibody (E8), which bind to two different epitopes on the PC1 protein:

**E3 and E4:** C-lectin domain of human PC1 (i.e. directed to N-terminal cleavage fragment)

**E8:** Third extracellular loop (i.e. directed to the C-terminal cleavage fragment)

Hybridomas for E3, E4 and E8 are available. Applications: western blotting, immunoprecipitation and immunofluorescence.

### Relevant publications:

Kurbegovic et al (2014), MCB Vol 34 (17), p 3341-3353. (E8, referred to as anti-rCC);

Kim et al (2014), Nat Commun Nov 18 (5) p 5482. (E4 antibody)

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## Additional Information

### INSTITUTION

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## **LICENSE STATUS**

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## **CATEGORIES**

- Research Tools, Antibodies, & Reagents

## **INVESTIGATOR(S)**

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