

# Mouse mAb

## soluble adenylyl cyclase (sAC, ADCY10)

50 $\mu$ L  
(10 western blots)

cat#: R21.002

# CEP<sup>sm</sup> BIOTECH

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### Applications

W, IP, IF-IC

### Species Cross-Reactivity

H, M, R, B, D, Mk

### Molecular Weight

50, 180 kDa

### Isotype

Mouse IgG1

H=Human, M=Mouse, R=Rat, B=Bovine, D=Dog, Mk=Monkey

W=western blot, IP=immunoprecipitation,  
IF-IC=Immunofluorescence, Immunocytochemistry

### Background:

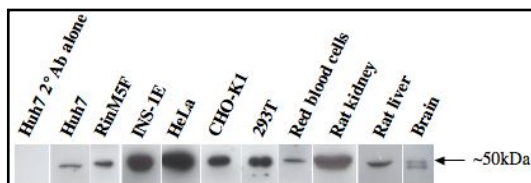
Soluble adenylyl cyclase (sAC) is a widely distributed adenylyl cyclase, distinct from the hormonally responsive transmembrane adenylyl cyclase (tmACs) isoforms. Distinct from tmACs, which are at the plasma membrane, sAC is distributed throughout the cell cytoplasm and can reside within organelles, including mitochondria, nuclei and centrioles. sAC is regulated by bicarbonate, calcium and cellular ATP levels, and it is thought to serve as a metabolic and intracellular pH sensor.

### Specificity/Sensitivity:

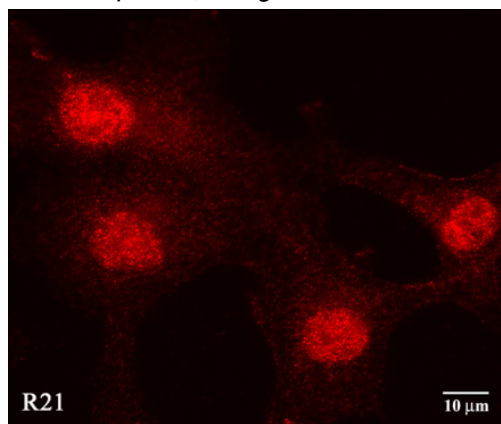
R21 is a mouse monoclonal antibody directed against amino acids 203-216 (EIESVPDQRAVKVN) of human sAC protein.

### Source/Purification:

R21 is produced in hybridoma cells growing in media containing low IgG bovine serum and purified over Protein G affinity resin.



Western blot analysis of extracts from multiple different cell lines and tissues of different species, using R21.



Immunocytochemistry of COS-7 cells, showing diffuse cytoplasmic and nuclear staining using R21

Storage: Supplied in 50 mM Tris-HCl (pH 7.5), 150 mM NaCl, 0.01% sodium azide, 0.05% BSA, 40% glycerol. Store at 4°C. For longer-term storage, aliquots can be stored at -20°C, but should not undergo repeated freeze-thaws.

\* Species cross-reactivity is determined by western blot and immunocytochemistry  
\* Anti-mouse secondary antibodies must be used to detect this antibody

### Recommended Antibody Dilutions:

Western Blotting	1:2,000
Immunoprecipitation	
IF-IC	1:50-100

These dilutions are meant as a guideline as different machines and techniques may alter antibody dilution.

### Background References:

Zippin, J.H. et al. (2003). Compartmentalization of bicarbonate-sensitive adenylyl cyclase in distinct signaling microdomains. *FASEB Journal* **17**: 82-84.

Pastor-Soler, N., et al. (2003). Bicarbonate regulated adenylyl cyclase (sAC) is a sensor that regulates pH-dependent V-ATPase recycling. *J. Biol. Chem.* **278**:49523-49529.

Hess, K.C. et al (2005). 'Soluble' Adenylyl Cyclase mediates Multiple Specific Signaling Events in Sperm Required for Fertilization. *Dev. Cell* **9**: 249-259.

Zippin, J.H., et al. (2010). Soluble adenylyl cyclase defines a nuclear cAMP microdomain in keratinocyte hyperproliferative skin diseases. *J. Investigative Dermatology* **130** 1279-1287.

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