

**#4573** Store at -20°C

## Cool2/ $\alpha$ Pix (C23D2) Rabbit mAb


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TECHNOLOGY®

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**For Research Use Only. Not for Use in Diagnostic Procedures.**

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IF-IC	H M	Endogenous	87	Rabbit	#Q15052	9459

### Product Usage Information

#### Application

Western Blotting  
Immunofluorescence (Immunocytochemistry)

#### Dilution

1:1000  
1:400

### Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100  $\mu$ g/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

### Specificity / Sensitivity

Cool2/ $\alpha$ Pix (C23D2) Rabbit mAb detects endogenous levels of total Cool2/ $\alpha$ Pix protein.

### Species predicted to react based on 100% sequence homology:

Rat, Dog

### Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human Cool2/ $\alpha$ Pix.

### Background

Cool/Pix proteins comprise a family of guanine nucleotide exchange factors (GEFs) localized to focal adhesions. The family consists of two isoforms, cool2/ $\alpha$ Pix and cool1/ $\beta$ Pix, the latter having two splice variants that vary in their carboxy termini (1). Cool2/ $\alpha$ Pix, like other GEFs, has a DH (Dbl homology) domain, which allows binding of small GTPases and GDP/GTP exchange, and a PH (Pleckstrin homology) domain (2). X-chromosomal genes mutated in nonspecific mental retardation (MRX) comprise a family of genes, including the gene encoding Cool2/ $\alpha$ Pix, thought to be involved in mental retardation (3,4). Cool2/ $\alpha$ Pix interacts with  $\beta$ -parvin/affixin, a protein involved in integrin signaling (5), and may act downstream of integrin-linked kinase (ILK) to regulate actin reorganization and cell spreading (6). When Cool2/ $\alpha$ Pix exists as a dimer, it functions as a Rac-specific GEF, whereas the monomeric protein acts as a GEF for both Rac and Cdc42. Regulation of Cool2/ $\alpha$ Pix dimerization, and therefore its specificity, occurs at least in part through p21 activated kinase (PAK) in response to extracellular signaling (7). Further, binding of Cdc42 enhances the Rac GEF activity of the Cool2/ $\alpha$ Pix dimer. Activated Rac in turn inhibits Cool2/ $\alpha$ Pix Rac GEF activity (8).

### Background References

1. Koh, C.G. et al. (2001) *J Cell Sci* 114, 4239-51.
2. Kutsche, K. and Gal, A. (2001) *Cytogenet Cell Genet* 95, 196-201.
3. Kutsche, K. et al. (2000) *Nat Genet* 26, 247-50.
4. Lower, K.M. and Gecz, J. (2001) *Am J Med Genet* 100, 43-8.
5. Rosenberger, G. et al. (2003) *Hum Mol Genet* 12, 155-67.
6. Filipenko, N.R. et al. (2005) *Oncogene* 24, 5837-49.
7. Feng, Q. et al. (2004) *EMBO J* 23, 3492-504.
8. Baird, D. et al. (2005) *Curr Biol* 15, 1-10.

### Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

### Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

### Applications Key

**WB:** Western Blotting **IF-IC:** Immunofluorescence (Immunocytochemistry)

### Cross-Reactivity Key

**H:** human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster  
**X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse  
**GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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