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ENSA Antibody


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

Applications: WB	Reactivity: H Mk	Sensitivity: Endogenous	MW (kDa): 15	Source: Rabbit	UniProt ID: #O43768	Entrez-Gene Id: 2029
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Product Usage Information	Application Western Blotting	Dilution 1:1000
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.	
Specificity / Sensitivity	ENSA Antibody recognizes endogenous levels of total ENSA protein.	
Species predicted to react based on 100% sequence homology:	Mouse, Rat	
Source / Purification	Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human ENSA protein. Antibodies are purified by protein A and peptide affinity chromatography.	
Background	Mitotic control is important for normal growth, development, and maintenance of all eukaryotic cells. Research studies have demonstrated that inappropriate control of mitosis can lead to genomic instability and cancer (reviewed in 1,2). A regulator of mitosis, Greatwall kinase (Gwl), was first identified in <i>Drosophila melanogaster</i> (3). Subsequent studies showed that, based on sequence homology and function, microtubule-associated serine/threonine kinase-like (MASTL) is the human ortholog of Gwl (4). Regulation of MASTL/Gwl activation has been shown to be critical for the correct timing of mitosis. Research studies have shown that Gwl is activated by hyperphosphorylation (5). The phosphorylation of human Gwl at Thr194 and Thr207 by active cyclin B1-cdc2 leads to possible autophosphorylation at Ser875 (Ser883 in <i>Xenopus</i>), which stabilizes the kinase. Activated Gwl phosphorylates α-Endosulfine (ENSA) and cAMP-regulated phosphoprotein 19 (ARPP19) at Ser67 and Ser62, respectively. Phosphorylated ENSA and ARPP19 inhibit the activity of the B55 subunit-associated form of protein phosphatase 2A (PP2A-B55), allowing for complete phosphorylation of mitotic substrates by cyclin B1-cdc2 and mitotic entry. When Gwl is inactivated, PP2A-B55 reactivates, which leads to dephosphorylation of cyclin B1-cdc2 and mitotic exit (5,6, reviewed in 7).	
Background References	<ol style="list-style-type: none"> 1. Eichhorn, P.J. et al. (2009) <i>Biochim Biophys Acta</i> 1795, 1-15. 2. Norbury, C. and Nurse, P. (1992) <i>Annu Rev Biochem</i> 61, 441-70. 3. Yu, J. et al. (2004) <i>J Cell Biol</i> 164, 487-92. 4. Voets, E. and Wolthuis, R.M. (2010) <i>Cell Cycle</i> 9, 3591-601. 5. Blake-Hodek, K.A. et al. (2012) <i>Mol Cell Biol</i> 32, 1337-53. 6. Vigneron, S. et al. (2011) <i>Mol Cell Biol</i> 31, 2262-75. 7. Lorca, T. and Castro, A. (2012) <i>Oncogene</i> 32, 537-543. 	

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
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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