Store at -20°C

# #11915 ENSA (D5Z1U) Rabbit mAb

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**Entrez-Gene ID** #2029
**UniProt ID** #O43768

**For Research Use Only. Not For Use In Diagnostic Procedures.**

| Applications | Species Cross-Reactivity* | Molecular Wt. | Isotype |
|---|---|---|---|
| W<br>Endogenous | H, Mk | 15 kDa | Rabbit IgG** |

**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 *Drosophila melanogaster* (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 *Xenopus*), 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).

**Specificity/Sensitivity:** ENSA (D5Z1U) Rabbit mAb recognizes endogenous levels of total ENSA protein.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human ENSA protein.

**Background References:**

(1) Eichhorn, P.J. et al. (2009) *Biochim Biophys Acta* 1795, 1-15.

(2) Norbury, C. and Nurse, P. (1992) *Annu Rev Biochem* 61, 441-70.

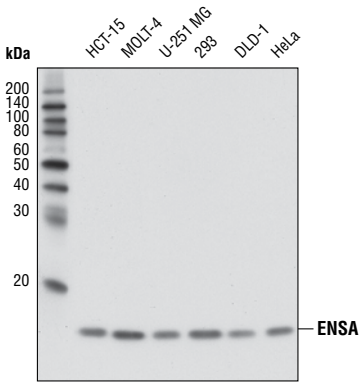
(3) Yu, J. et al. (2004) *J Cell Biol* 164, 487-92.

(4) Voets, E. and Wolthuis, R.M. (2010) *Cell Cycle* 9, 3591-601.

(5) Blake-Hodek, K.A. et al. (2012) *Mol Cell Biol* 32, 1337-53.

(6) Vigneron, S. et al. (2011) *Mol Cell Biol* 31, 2262-75.

(7) Lorca, T. and Castro, A. (2012) *Oncogene* 32, 537-543.




*Western blot analysis of extracts from various cell lines using ENSA (D5Z1U) Rabbit mAb.*

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

**Recommended Antibody Dilutions:**

| | |
|---|---|
| Western blotting | 1:1000 |

**For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com**



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

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Cell Signaling TECHNOLOGY®

**Applications:** **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **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 **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.