Revision 1

#64508 Store at -20C

Phospho-Estrogen Receptor α (Ser167) (D5W3Z) Rabbit mAb

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355) orders@cellsignal.com

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3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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	Endogenous	66	Rabbit IgG	#P03372	2099

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunofluorescence (Immunocytochemistry)	1:800

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.

Specificity / Sensitivity

Phospho-Estrogen Receptor α (Ser167) (D5W3Z) Rabbit mAb recognizes endogenous levels of ERα protein only when phosphorylated at Ser167.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser167 of human ERα protein.

Background

Estrogen receptor α (ERα), a member of the steroid receptor superfamily, contains highly conserved DNA binding and ligand binding domains (1). Through its estrogen-independent and estrogen-dependent activation domains (AF-1 and AF-2, respectively), ERα regulates transcription by recruiting coactivator proteins and interacting with general transcriptional machinery (2). Phosphorylation at multiple sites provides an important mechanism to regulate ERα activity (3-5). Ser104, 106, 118, and 167 are located in the amino-terminal transcription activation function domain AF-1, and phosphorylation of these serine residues plays an important role in regulating ERα activity. Ser118 may be the substrate of the transcription regulatory kinase CDK7 (5). Ser167 may be phosphorylated by p90RSK and Akt (4,6). According to the research literature, phosphorylation at Ser167 may confer tamoxifen resistance in breast cancer patients (4).
ERα can be phosphorylated at Ser167 by various kinases such as S6K1, RSK, and Aurora A (7-9). Phosphorylation on Ser167 promotes ERα-dependent transcription and cellular proliferation, and is attributed to increased resistance to tamoxifen treatment (6, 9, 10). Various studies have shown that increased Ser167 phosphorylation correlates with poor prognosis in different cancer types (11, 12)

Background References

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3. Chen, D. et al. (1999) *Mol Cell Biol* 19, 1002-15.
4. Campbell, R.A. et al. (2001) *J Biol Chem* 276, 9817-24.
5. Chen, D. et al. (2000) *Mol Cell* 6, 127-37.
6. Joel, P.B. et al. (1998) *Mol Cell Biol* 18, 1978-84.
7. Yamnik, R.L. et al. (2009) *J Biol Chem* 284, 6361-9.
8. Yamnik, R.L. and Holz, M.K. (2010) *FEBS Lett* 584, 124-8.
9. Zheng, X.Q. et al. (2014) *Oncogene* 33, 4985-96.
10. Wang, Y. et al. (2015) *J Mol Endocrinol* 54, 351-61.
11. López-Calderero, I. et al. (2014) *Hum Pathol* 45, 2437-46.
12. Kato, E. et al. (2014) *Cancer Sci* 105, 1307-12.

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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Limited Uses