Revision 3

Store at -20C

#42101

# Phospho-Estrogen Receptor α (Ser167) (D5W3Z) Rabbit mAb (ChIP Formulated)

Cell Signaling TECHNOLOGY®

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| Applications: | Reactivity: | Sensitivity: | Source/Isotype: | UniProt ID: | Entrez-Gene Id: |
|---|---|---|---|---|---|
| ChIP, C&R | H | Endogenous | Rabbit IgG | #P03372 | 2099 |

## Product Usage Information

For optimal ChIP results, use 5 µl of antibody and 10 µg of chromatin (approximately 4 x $10^6$ cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

The CUT&RUN dilution was determined using CUT&RUN Assay Kit #86652.

| Application | Dilution |
|---|---|
| Chromatin IP | 1:100 |
| CUT&RUN | 1:100 |

## 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 (ChIP Formulated) recognizes endogenous levels of ERα protein only when phosphorylated at Ser167.

## Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide 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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## Species Reactivity

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

## Applications Key

**ChIP:** Chromatin IP **C&R:** CUT&RUN

## Cross-Reactivity Key

**H:** Human

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