

Code No. 18640

**Anti-Human  
14-3-3  $\sigma$  Protein (69) Rabbit IgG Affinity Purify**Volume : 100  $\mu$ g

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**Introduction** : The 14-3-3 proteins are a family of conserved regulatory molecules expressed in all eukaryotic cells. A striking feature of the 14-3-3 proteins is their ability to bind a multitude of functionally diverse signaling proteins, including kinases, phosphatases, and transmembrane receptors. This plethora of interacting proteins allows 14-3-3 to play important roles in a wide range of vital regulatory processes, such as mitogenic signal transduction, apoptotic cell death, and cell cycle control.

The cell cycle checkpoint plays an important role in maintaining the integrity of cells. The G1 arrest is due to p53-mediated induction of the cyclin-dependent kinase inhibitor p21WAF1/CIP1/SDI1, but the basis for the G2 arrest is unknown. Recently, one of the 14-3-3 protein family members, 14-3-3sigma, was shown to be regulated by p53 and to play a role in the G2-M-phase checkpoint.

14-3-3 sigma was cloned by expression cloning through cyclin-dependent kinase 2 (CDK2) association. 14-3-3 sigma shares cyclin-CDK2 binding motifs with different cell cycle regulators, including p107, p130, p21 (CIP1), p27 (KIP1), and p57 (KIP2), and is associated with cyclin.

**Antigen** : Synthetic peptide of intermediate portion of human 14-3-3 sigma protein

**Purification** : Purified with antigen peptide

**Form** : Lyophilized product from PBS containing 1 % BSA and 0.05 % NaN<sub>3</sub>

**How to use** : 1.0 mL deionized water will be added to the product (the conc. comes up 100  $\mu$ g /mL)

**Stability** : Lyophilized product, 5 years at 2 – 8 °C  
: Solution, 2 years at –20 °C

**Application** : This antibody can be used for immunohistochemistry with formalin fixed paraffin embedded tissues after microwave treatment (10 Min, 10mM citrate buffer, pH 6.0). The recommended concentration is 1 - 3  $\mu$ g/mL, however, the concentration should be optimized by each laboratory.  
: This antibody can be used for western blotting in concentration of 1 - 3  $\mu$ g /mL.

**Specificity** : Human 14-3-3 sigma specific. Does not cross-react with 14-3-3 Beta, Gamma, Epsilon, Zeta, Eta, and Tau. (Confirmed by western blotting.)

**Reference** : 1. Hermeking H, Lengauer C, Polyak K, He TC, Zhang L, Thiagalingam S, Kinzler KW, Vogelstein B. 14-3-3 sigma is a p53-regulated inhibitor of G2/M progression. *Mol Cell*. 1997 Dec; 1(1): 3-11.  
2. Chan TA, Hermeking H, Lengauer C, Kinzler KW, Vogelstein B. 14-3-3 Sigma is required to prevent mitotic catastrophe after DNA damage. *Nature*. 1999 Oct 7; 401(6753): 616-20.  
3. Nakajima T, Shimooka H, Weixa P, Segawa A, Motegi A, Jian Z, Masuda N, Ide M, Sano T, Oyama T, Tsukagoshi H, Hamanaka K, Maeda M. Immunohistochemical demonstration of 14-3-3 sigma protein in normal human tissues and lung cancers, and the preponderance of its strong expression in epithelial cells of squamous cell lineage. *Pathol Int*. 2003 Jun; 53(6): 353-60.

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*For research use only, not for use in diagnostic procedures.*

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