

Product Information

WEE 1, ACTIVE

Rat, Recombinant
Expressed in *E. coli*

Product Number **W4387**
Storage Temperature $-70\text{ }^{\circ}\text{C}$

Product Description

Recombinant rat Wee 1, active, is produced from a cDNA sequence corresponding to full-length rat Wee 1 that is glutathione S-transferase (GST)-tagged at the amino terminus. It is expressed in *E. coli* as an approximately 110 kDa fusion protein. It is purified by affinity chromatography on glutathione agarose. One unit of Wee 1 activity is defined as the amount of enzyme that produces 90% inhibition of the activity of 10 units of CDK2. One unit of CDK2 will transfer 1 pmol of phosphate to histone H1 per minute at pH 7.2 and 30 °C.

The cell cycle in eukaryotes is controlled by a family of cyclin-dependent kinases (CDKs).^{1,2,3} The activity of CDK1 and CDK2 is regulated by phosphorylation and dephosphorylation of Thr¹⁴ and Tyr¹⁵ of the catalytic subunit, Cdc2.

The Wee 1 is a protein tyrosine kinase that negatively regulates the entry of cells into mitosis by phosphorylating Cdc2 on Tyr¹⁵ thus inactivating CDK1 and CDK2.^{4,5,6}

Reagent

Recombinant rat Wee 1 is supplied as a solution in 50 mM Tris HCl buffer, pH 7.5, containing 1 mM EDTA, 1 mM dithiothreitol, and 10% glycerol.

Precautions and Disclaimer

This product is for laboratory research use only. Please consult the Material Safety Data Sheet for handling recommendations before working with this material.

Storage/Stability

Recombinant rat Wee 1 is stable for at least six months when stored at $-70\text{ }^{\circ}\text{C}$. For maximum recovery of product, centrifuge the original vial after thawing and prior to removing the cap. Avoid repeated freeze-thaw cycles. Do not store in a frost-free freezer.

References

1. Jacobs, T., Control of the cell cycle. *Dev. Biol.*, **153**, 1-15 (1992).
2. Sherr, C.J., G1 phase progression: cycling on cue. *Cell*, **79**, 551-555 (1994).
3. Nasmyth, K., Viewpoint: putting the cell cycle in order. *Science*, **274**, 1643-1645 (1996).
4. Russell, P. et al., Negative regulation of mitosis by *wee1+*, a gene encoding a protein kinase homolog., *Cell*, **49**, 559-567 (1987).
5. Lundgren, K. et al., *mik1* and *wee1* cooperate in the inhibitory tyrosine phosphorylation of *cdc2*. *Cell*, **64**, 1111-1122 (1991).
6. McGowan, C.H. et al., Human Wee1 kinase inhibits cell division by phosphorylating p34cdc2 exclusively on Tyr15. *EMBO J.*, **12**, 75-85 (1993).

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