



FH (Phospho-Thr236) Antibody

#12261

Catalog Number: 12261

Amount: 100µg/100µl

Swiss-Prot No. : P07954

Form of Antibody: Rabbit IgG in phosphate buffered saline (without Mg²⁺ and Ca²⁺), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.

Storage/Stability: Store at -20°C/1 year

Immunogen: The antiserum was produced against synthesized phosphopeptide derived from Human FH around the phosphorylation site of threonine 236.

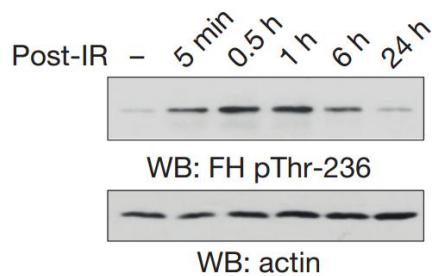
Purification: The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific phosphopeptide. The antibody against non-phosphopeptide was removed by chromatography using non-phosphopeptide corresponding to the phosphorylation site.

Specificity/Sensitivity: FH (Phospho-Thr236) antibody detects endogenous levels of FH only when phosphorylated at threonine 236.

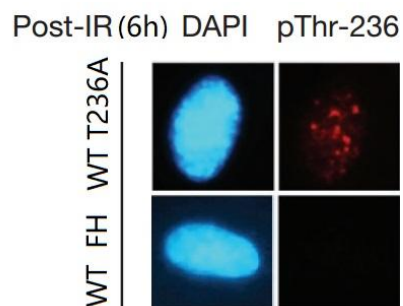
Reactivity: Human, Mouse, Rat

Applications:

Predicted MW: 49kd WB :1:500~1:1000 IHC :1:50-200



Thymidine double block-synchronized U2OS cells (G1 phase) were exposed to ionizing radiation (10Gy) and collected at the indicated time points after exposure. Immunoblotting analyses were performed with the indicated antibodies.



U2OS cells with depleted endogenous FH and reconstituted expression of the indicated FH proteins were irradiated with ionizing radiation (3Gy). Immunofluorescence analyses with the indicated antibodies were performed at the indicated time points after exposure to ionizing radiation.

Background :

FH translocates from the cytosol into the nucleus on DNA damage. Enzymatic activity of FH and its product, fumarate, are critical elements of the DNA damage response and that FH deficiency promotes tumorigenesis due to impairment of DNA repair. Histone methylation regulates DNA repair. Exposure to ionizing radiation induces DNA-PK-dependent phosphorylation of nuclear fumarase at Thr 236, which leads to an interaction between fumarase and the histone variant H2A.Z at DNA double-strand break (DSB) regions. Locally generated fumarate increases non-homologous end-joining DNA repair and cell survival ^[i]

[i] Jiang Y, Qian X, Shen J, Wang Y, Li X, Liu R, Xia Y, Chen Q, Peng G, Lin SY, Lu Z. Local generation of fumarate promotes DNA repair through inhibition of histone H3 demethylation. *Nat Cell Biol.* 2015 Sep;17(9):1158-68. doi: 10.1038/ncb3209.