KHK-A(Phospho-Ser80) Antibody

#58004

Number: 58004-1, 58004-2

Amount: 50μg/50μl, 100μg/100μl

Swiss-Prot No. :P50053-2

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℃/1 year

Immunogen: The antiserum was produced against synthesized phosphopeptide derived from Human KHK-A around the phosphorylation site of serine 80 .

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:KHK-A (phospho-Ser80) antibody detects endogenous levels of KHK-A only when phosphorylated at serine 80.

Reactivity: Human,Mouse

Applications:

Predicted MW: 33kd

WB **:**1:500~1:1000 IHC:1:50-100

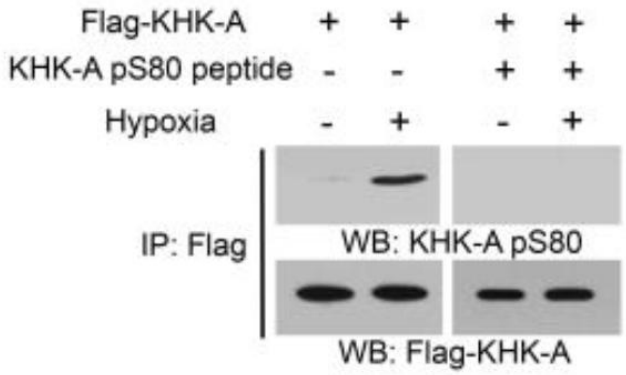
Background :

KHK, whose KHK-C isoform is primarily expressed in normal hepatocytes, is a metabolic enzyme that was originally characterized as a kinase that phosphorylates fructose. HCC-specific splicing of the adjacent exons 3C and 3A of the KHK gene leads to KHK-A expression in cancer cells. KHK-A, which loses its affinity to bind and phosphorylate fructose, gains the ability to function as a protein kinase. Upon hypoxic stress, Oxidative stimulation induces HCC-specifically expressed fructokinase A (KHK-A) phosphorylation at S80 by 5′-adenosine monophosphate-activated protein kinase. KHK-A in turn acts as a protein kinase to phosphorylate p62 at S28, thereby blocking p62 ubiquitination and enhancing p62’s aggregation with Keap1 and Nrf2 activation. Activated Nrf2 promotes expression of genes involved in reactive oxygen species reduction, cell survival, and HCC development.

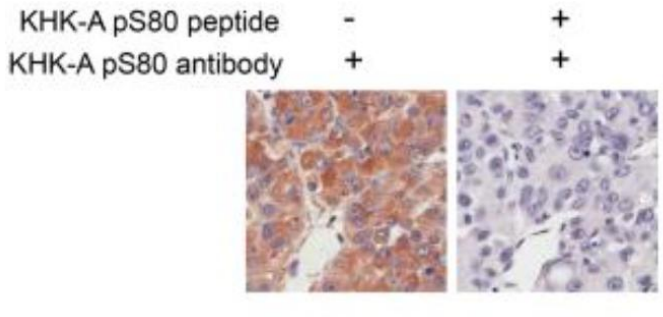
References:

Xu D et al. The protein kinase activity of fructokinase A specifies the antioxidant responses of tumor cells by phosphorylating p62. Sci Adv. 2019 Apr 24;5(4):eaav4570. doi: 10.1126/sciadv.aav4570.
PMID: 31032410

Application in this Article



Huh7 cells expressing Flag–KHK-A were treated with or without hypoxia for 6 h. Immunoprecipitation and immunoblot analyses were performed with the indicated antibodies in the presence or absence of a blocking peptide of KHK-A pS80.



Immunohistochemistry (IHC) analyses of human HCC tissues were performed with the indicated antibodies in the presence or absence of a blocking peptide of KHK-A pS80.