

cytochrome c (2G8): sc-65396

BACKGROUND

Cytochrome c is a well characterized mobile electron transport protein that is essential to energy conversion in all aerobic organisms. In mammalian cells, this highly conserved protein is normally localized to the mitochondrial intermembrane space. More recent studies have identified cytosolic cytochrome c as a factor necessary for activation of apoptosis. During apoptosis, cytochrome c is translocated from the mitochondrial membrane to the cytosol, where it is required for activation of caspase-3 (CPP32). Overexpression of Bcl-2 has been shown to prevent the translocation of cytochrome c, thereby blocking the apoptotic process. Overexpression of Bax has been shown to induce the release of cytochrome c and to induce cell death. The release of cytochrome c from the mitochondria is thought to trigger an apoptotic cascade, whereby Apaf-1 binds to Apaf-3 (caspase-9) in a cytochrome c-dependent manner, leading to caspase-9 cleavage of caspase-3.

REFERENCES

- Gonzales, D.H., et al. 1990. Biogenesis of mitochondrial c-type cytochromes. *J. Bioenerg. Biomembr.* 22: 753-768.
- Lehninger, A.L., et al. 1993. Principles of Biochemistry, 2nd ed. New York: Worth Publishers, Inc., 480-483.
- Liu, X., et al. 1996. Induction of apoptotic program in cell-free extracts: requirement for dATP and cytochrome c. *Cell* 86: 147-157.
- Yang, J., et al. 1997. Prevention of apoptosis by Bcl-2: release of cytochrome c from mitochondria blocked. *Science* 275: 1129-1132.

CHROMOSOMAL LOCATION

Genetic locus: CYCS (human) mapping to 7p15.3.

SOURCE

cytochrome c (2G8) is a mouse monoclonal antibody raised against cytochrome c of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

cytochrome c (2G8) is recommended for detection of cytochrome c of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for cytochrome c siRNA (h): sc-29292, cytochrome c shRNA Plasmid (h): sc-29292-SH and cytochrome c shRNA (h) Lentiviral Particles: sc-29292-V.

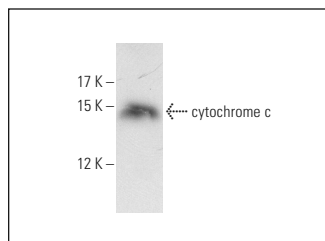
Molecular Weight of cytochrome c: 15 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HL-60 whole cell lysate: sc-2209 or K-562 whole cell lysate: sc-2203.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



cytochrome c (2G8): sc-65396. Western blot analysis of cytochrome c expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

- Wang, X.H., et al. 2011. Effects of berberine on human rheumatoid arthritis fibroblast-like synoviocytes. *Exp. Biol. Med.* 236: 859-866.
- Yan, J., et al. 2011. Andrographolide induces cell cycle arrest and apoptosis in human rheumatoid arthritis fibroblast-like synoviocytes. *Cell Biol. Toxicol.* 28: 47-56.
- Deng, M., et al. 2017. Combination of celecoxib and PD184161 exerts synergistic inhibitory effects on gallbladder cancer cell proliferation. *Oncol. Lett.* 13: 3850-3858.
- Al-Oatati, A. and Aliwaini, S. 2017. Combined pitavastatin and dacarbazine treatment activates apoptosis and autophagy resulting in synergistic cytotoxicity in melanoma cells. *Oncol. Lett.* 14: 7993-7999.
- Jia, J., et al. 2018. Sijunzi decoction-treated rat serum induces apoptosis of side population cells in gastric carcinoma. *Exp. Ther. Med.* 15: 1718-1727.
- Zou, X. and Huang, W. 2018. TTB2 induces apoptosis in Ewing sarcoma cells. *Exp. Ther. Med.* 16: 1021-1025.
- Luff, S.A., et al. 2018. Role of p53 and transcription-independent p53-induced apoptosis in shear-stimulated megakaryocytic maturation, particle generation, and platelet biogenesis. *PLoS ONE* 13: e0203991.
- Hua, F., et al. 2018. Daidzein exerts anticancer activity towards SKOV3 human ovarian cancer cells by inducing apoptosis and cell cycle arrest, and inhibiting the Raf/MEK/ERK cascade. *Int. J. Mol. Med.* 41: 3485-3492.
- Zhong, X., et al. 2018. Downregulation of microRNA-34a inhibits oxidized low-density lipoprotein-induced apoptosis and oxidative stress in human umbilical vein endothelial cells. *Int. J. Mol. Med.* 42: 1134-1144.
- Mota, T.C., et al. 2019. Markers of oxidative-nitrosative stress induced by artesunate are followed by clastogenic and aneugenic effects and apoptosis in human lymphocytes. *J. Appl. Toxicol.* 39: 1405-1412.

RESEARCH USE

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