DB044: Apaf-1 (A15)

Background:

Large multi-protein complexes known as the DISC (death inducing signalling complex) and the apoptosome activate the normally inactive caspases through proteolytic processing (1). The formation of these complexes leads to the activation of caspases and the execution of apoptosis (1,2). The apoptosome is a large 700 or 1400 kDa protein complex comprised of Apaf-1 (apoptotic protease activating factor-1), cytochrome c, and dATP (1). Apaf-1 and cytochrome c in the presence of dATP leads to the oligomerization of Apaf-1 and the formation of either the 700 or 1400 kDa complexes (3&4). Once formed the apoptosome activates caspase-9, which in turn activates the effector caspases (1&5). Some researchers have found the 700 kDa apoptosome to be the most effective activator of the effector caspases, when compared to the 1400 kDa apoptosome (3&4). Apaf-1 has also been shown to be a target of regulation by a variety of proteins that include p53, IAPs, heat shock proteins and Smac/Diablo (1&6).

Origin:

Apaf-1 (A15) is provided as an affinity purified rabbit polyclonal antibody, raised against a peptide mapping to the amino terminus of human Apaf-1.

Product Details:

Each vial contains 200 µg/ml of affinity purified rabbit IgG Apaf-1 (A15) DB044, in 1 ml PBS containing 0.1 % sodium azide and 0.2% gelatin.

Competition Studies:

A blocking peptide is also available, *DB044P*, for use in competition studies. Each vial contains 100 µg of peptide in 0.5 ml PBS with 0.1% sodium azide and 100 µg BSA.

Specificity:

Apaf-1 (A15) DB044 reacts with Apaf-1 of mouse, rat, and human origin by western blotting. Western blotting starting dilution 1:200.
IP and IHC not yet tested

Storage:

Store this product at 4º C, do not freeze. The product is stable for one year from the date of shipment.

References:

1. Cain K., Bratton S.B., Cohen G.M. 2002. The Apaf-1 apoptosome: a large caspase-activating complex. Biochimie 84 (2-3):203-214.
2. Bratton S.B., Lewis J., Butterworth M., Duckett C.S., Cohen G.M. 2002. XIAP inhibition of caspase-3 preserves its association with the Apaf-1 apoptosome and prevents CD95- and Bax-induced apoptosis. Cell Death Differ 9(9):881-892.
3. Bratton S.B., Walker G., Roberts D.L., Cain K., Cohen G.M. 2001. Caspase-3 cleaves Apaf-1 into an ~30kDa fragment that associates with an inappropriately oligomerized and biologically inactive ~1.4 Mda apoptosome complex. Cell Death Differ 8(4):425-433.
4. Cain K., Bratton S.B., Langlais C., Walker G., Brown D.G., Sun X.M., Cohen G.M. 2000. Apaf-1 oligomerizes into biologically active approximately 700-kDa and inactive approximately 1.4-Mda apoptosome complex. J Biol Chem 275(9):6067-6070.
5. Zou H., Li Y., Liu X., Wang X. 1999. An Apaf-1.cytochrome c multimeric complex is a functional apoptosome that activates procaspase-9. J Biol Chem 274(17):11549-11556.
6. Robles A.I., Bemmels N.A., Foraker A.B., Harris C.C. 2001. Apaf-1 is a transcriptional target of p53 in DNA damage-induced apoptosis. Cancer Res 61(18):6660-6664.