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ProductInformation

Atractyloside potassium salt

Product Number **A 6882**
Store at Room Temperature

Product Description

Molecular Formula: $C_{30}H_{44}O_{16}S_2K_2$
Molecular Weight: 803.0
CAS Number: 102130-43-8
Synonym: (2β,4α,15α)-15-hydroxy-2-[[2-O-(e-methyl-1-oxobutyl)-3,4-di-O-sulfo-β-D-glucopyranosyl]oxy]-19-norkaur-16-en-18-oic acid dipotassium salt[1]

Atractyloside is an extremely toxic glucoside that is obtained from the Mediterranean thistle *Atractylis gummifera*.[1] It Inhibits oxidative phosphorylation by blocking the transfer of adenosine nucleotides through the mitochondrial membrane by the transport protein ATP-ADP translocase.[2,3] Atractyloside binds to the ATP-ADP translocase after the protein has off-loaded its ATP into the cytosol and before it binds an ADP for transport into the mitochondrial matrix space.[4] A protocol for the measurement of mitochondrial transmembrane potential in cells and in isolated mitochondria, including the use of atractyloside as one example of apoptotic induction, has been described.[5]

Atractyloside has been used to probe the source of procaspase 8 in human fibroblasts and mouse clonal striatal cells, as related to death receptor-mediated apoptosis.[6] Atractyloside induces the release of a hyaluronidase-induced murine WW domain-containing oxidoreductase from cultured COS-7 cells, with respect to tumor necrosis factor cytotoxicity.[7]

An LC-MS/MS analysis of protein fractions isolated from atractyloside-treated mitochondria has been described.[8] The inhibition of atractyloside-induced toxicity against rat renal cortical slices *in vitro* by various compounds, including calpain inhibitor I, has been studied.[9]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in water (20 mg/ml), yielding a clear, very faint yellow solution. The maximum solubility of this product in water is approximately 25 mg/ml at 40 °C.

References

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4. Fiore, C., et al., The mitochondrial ADP/ATP carrier: structural, physiological and pathological aspects. Biochimie, **80(2)**, 137-150 (1998).
5. Zamzami, N. et al., Quantitation of mitochondrial transmembrane potential in cells and in isolated mitochondria. Methods Enzymol., **322**, 208-213 (2000).
6. Qin, Z. H., et al., Pro-caspase-8 is predominantly localized in mitochondria and released into cytoplasm upon apoptotic stimulation. J. Biol. Chem., **276(11)**, 8079-8086 (2001).
7. Chang, N. S., et al., Hyaluronidase induction of a WW domain-containing oxidoreductase that enhances tumor necrosis factor cytotoxicity. J. Biol. Chem., **276(5)**, 3361-3370 (2001).

8. Spahr, C. S., et al., Simplification of complex peptide mixtures for proteomic analysis: reversible biotinylation of cysteinyl peptides. Electrophoresis, **21(9)**, 1635-1650 (2000).

9. Obatomi, D. K., et al., Adenine nucleotide and calpain inhibitor I protect against atractyloside-induced toxicity in rat renal cortical slices *in vitro*. Arch. Toxicol., **75(8)**, 487-496 (2001).

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