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ProductInformation

AA-861

Product Number **A 3711**
Storage Temperature 2-8 °C

Product Description

Molecular Formula: $C_{21}H_{26}O_3$
Molecular Weight: 326.4
CAS Number: 80809-81-0
Synonym: 2-(12-hydroxydodeca-5,10-diynyl)-3,5,6-trimethyl-*p*-benzoquinone, 2,3,5-trimethyl-6-(12-hydroxy-5,10-dodecadiynyl)-1,4-benzoquinone[1,2]

AA-861 is a benzoquinone derivative and a competitive inhibitor of 5-lipoxygenase, an enzyme involved in the biosynthesis of leukotrienes. AA-861 is used to probe fatty acid metabolism and leukotriene production *in vivo*. Studies on guinea pig peritoneal polymorphonuclear leukocytes have indicated an ID_{50} of 0.8 µM for AA-861 for the inhibition of 5-lipoxygenase activity.[2] AA-861 has been shown to inhibit endothelium-derived relaxing factor vasodilation in rabbit aorta.[3]

The inhibition of the A-23187-induced formation of 5-HETE and LTB_4 in rat peritoneal macrophages by AA-861 has been demonstrated.[4] AA-861 has been used to study proliferation of cultured immature rat cerebellar granule neurons by a [^{3}H]thymidine incorporation assay.[5] AA-861 has been shown to inhibit the growth of cultured rat Kupffer cells, which play a principal role in liver fibrosis.[6] A study of steroidogenic acute regulatory (StAR) gene and protein expression in MA-10 Leydig cells has utilized AA-861 at 65 µM.[7]

Precautions and Disclaimer

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

Preparation Instructions

This product is soluble in ethanol (10 mg/ml), yielding a clear, yellow to yellow green solution. It is also soluble in acetonitrile, ethyl acetate, and chloroform.

This product is virtually insoluble in water.

References

1. Terao, S., et al., Quinones. Part 2. General Synthetic Routes to Quinone Derivatives with Modified Polyprenyl Side Chains and the Inhibitory Effects of these Quinones on the Generation of the Slow Reacting Substance of Anaphylaxis (SRS-A). J. Chem. Soc. Perkin Trans. I, 2909-2920 (1982).
2. Yoshimoto, T., et al., 2,3,5-Trimethyl-6-(12-hydroxy-5,10-dodecadiynyl)-1,4-benzoquinone (AA861), a selective inhibitor of the 5-lipoxygenase reaction and the biosynthesis of slow-reacting substance of anaphylaxis. Biochim. Biophys. Acta, **713(2)**, 470-473 (1982).
3. Forstermann, U., et al., Mechanisms of action of lipoxygenase and cytochrome P-450-mono-oxygenase inhibitors in blocking endothelium-dependent vasodilatation. Br. J. Pharmacol., **93(3)**, 569-578 (1988).
4. Ashida, Y., et al., Pharmacological profile of AA-861, a 5-lipoxygenase inhibitor. Prostaglandins, **26(6)**, 955-972 (1983).
5. Uz, T., et al., 5-Lipoxygenase is required for proliferation of immature cerebellar granule neurons *in vitro*. Eur. J. Pharmacol., **418(1-2)**, 15-22 (2001).
6. Titos, E., et al., Inhibition of 5-lipoxygenase induces cell growth arrest and apoptosis in rat Kupffer cells: implications for liver fibrosis. FASEB J., **17(12)**, 1745-1747 (2003).
7. Wang, X., et al., The role of arachidonic acid in steroidogenesis and steroidogenic acute regulatory (StAR) gene and protein expression. J. Biol. Chem., **275(26)**, 20204-20209 (2000).

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