Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

Combretastatin A4

Catalog No: tcsc6023

Available Sizes

Size: 5mg

Size: 10mg

Size: 25mg

Specifications

CAS No:
117048-59-6

Formula:
$C_{18}H_{20}O_5$

Pathway:
Cell Cycle/DNA Damage;Cytoskeleton

Target:
Microtubule/Tubulin;Microtubule/Tubulin

Purity / Grade:
>98%

Solubility:
10 mM in DMSO

Alternative Names:
CRC 87-09

Observed Molecular Weight:
316.35

Product Description

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Combretastatin A4 is a **microtubule**-targeting agent that binds **β-tubulin** with $\mathbf{K_d}$ of 0.4 μM.

IC50 & Target: Kd: 0.4 μM (β-tubulin)

In Vitro: Combretastatin A4 phosphate (≥ 50 μM) significantly increases the percentage of annexin-V-binding cells and significantly decreases forward scatter. Combretastatin A4 phosphate does not appreciably increase hemolysis. Hundred μM Combretastatin A4 phosphate significantly increases Fluo3-fluorescence. The effect of Combretastatin A4 phosphate (100 μM) on annexin-V-binding is significantly blunted, but not abolished, by removal of extracellular Ca^{2+}. Combretastatin A4 phosphate (≥ 50 μM) significantly decreases GSH abundance and ATP levels but does not significantly increase ROS or ceramide[2]. Polymersomes co-encapsulating doxorubicin-combretastatin-A4 phosphate (1:10) shows strong synergistic cytotoxicity against human nasopharyngeal epidermal carcinoma (KB) cells[3]. Pretreatment with Combretastatin A4 phosphate does not influence the amount of VM in 3-D culture as well as the expression of these key molecules[4].

In Vivo: DBP and MBP at 30 minutes after administration are higher in rats treated with Combretastatin A4 disodium phosphate 120 mg/10 mL/kg. The toxicokinetic parameters of Combretastatin A4 phosphate and Combretastatin A4 in rats treated with Combretastatin A4 disodium phosphate 120 mg/10 mL/kg are indicated, and the values of Cmax, T1/2, and AUC0-inf for Combretastatin A4 are 156±13 μM, 5.87±1.69 h, and 89.4±10.1 h·μM, respectively[1]. In vivo, W256 tumors show marked intratumoral hypoxia after Combretastatin A4 phosphate treatment, accompanied by increased VM formation. Combretastatin A4 phosphate exhibits only a delay in tumor growth within 2 days but rapid tumor regrowth afterward. VM density is positively related to tumor volume and tumor weight at day 8. Combretastatin A4 phosphate causes hypoxia which induces VM formation in W256 tumors through HIF-1α/EphA2/PI3K/matrix metalloproteinase (MMP) signaling pathway, resulting in the consequent regrowth of the damaged tumor[4].