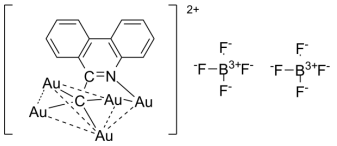
PAA5

Cat. No.:	HY-149036
Molecular Formula:	$C_{14}H_8Au_5B_2F_8N^{2-}$
Molecular Weight:	1348.66
Target:	Ferroptosis; Endogenous Metabolite; Reactive Oxygen Species
Pathway:	Apoptosis; Metabolic Enzyme/Protease; Immunology/Inflammation; NF-κB
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

PAA5 is a methide carbon-centered polynuclear Au(I) cluster. PAA5 can release Au(I) causing Pro-oxidant response and accelerated ferroptosis. PAA5 increases the expression of pH2AX in a time-dependent manner. PAA5 has anticancer activity [1].

In Vitro

PAA5 (0-4 μM; 24 h) induces ferroptosis and increase of the ferroptosis marker gene prostaglandin-endoperoxide synthase 2 (PTGS2). PAA5 decreases cell viability in EJ cells with IC_{50} values of 1.0 μM and 2.7 μM for EJ and HUVEC cells, respectively[1]. PAA5 (1.5 μM; 4 h; EJ and HUVEC cells) releases active Au(I) metabolites within cells and increases GSH and ROS level[1]. PAA5 (4 μM; 1, 3 and 6 h, EJ cells) causes significant DNA damage as indicated by the increase of histone H2AX phosphorylation (pH2AX)[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	HUVEC, EJ cells
Concentration:	0, 0.5, 1, 1.5, 2, and 4 μM
Incubation Time:	24 hours
Result:	Decreased cell viability of EJ cells 57 and 55%, respectively, compare with HUVEC cells.

Western Blot Analysis[1]

Cell Line:	EJ cells
Concentration:	4 μM
Incubation Time:	1, 3, and 6 hours
Result:	Increased the expression of pH2AX in a time dependent manner.

In Vivo

PAA5 (1.5 μM, 100 μL; intravesical delivered into the bladder; 5 times every other day for 8 days) shows anti-tumor activity in mouse[1].

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Animal Model:	4-6 weeks, 18 g, female BALB/c nude mice[1]
Dosage:	1.5 μM, 100 μL
Administration:	Intravesical delivered into the bladder; 5 times every other day for 8 days
Result:	Exhibited a good antitumor effect with the small average tumor volume of 564 ± 180 mm^3 after 22 days and no significant body weight loss.

REFERENCES

[1]. Xiao K, et, al. Pro-oxidant response and accelerated ferroptosis caused by synergetic Au(I) release in hypercarbon-centered gold(I) cluster prodrugs. Nat Commun. 2022 Aug 9;13(1):4669.

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