7-Aminoactinomycin D

Cat. No.: HY-D1020

CAS No.: 7240-37-1

Molecular Formula: $C_{62}H_{87}N_{13}O_{16}$

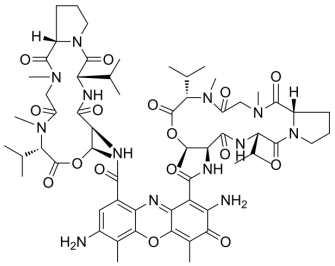
Molecular Weight: 1270.43

Target: Bacterial; Antibiotic; DNA Stain; DNA/RNA Synthesis

Pathway: Anti-infection; Cell Cycle/DNA Damage

Storage: -20°C, protect from light

* The compound is unstable in solutions, freshly prepared is recommended.



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (78.71 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	0.7871 mL	3.9357 mL	7.8714 mL
	5 mM	0.1574 mL	0.7871 mL	1.5743 mL
	10 mM	0.0787 mL	0.3936 mL	0.7871 mL

Please refer to the solubility information to select the appropriate solvent.

BIOLOGICAL ACTIVITY

Description

7-Aminoactinomycin D (7-AAD) a fluorescent DNA stain, is a potent RNA polymerase inhibitor. 7-Aminoactinomycin D selectively binds to GC regions of the DNA. 7-Aminoactinomycin D also has antibacterial effects[1][2][3].

In Vitro

7-Aminoactinomycin D (7-AAD) is a DNA dye that distinguishes viable, apoptotic, and late apoptotic/dead cells in flow cytometry. 7-Aminoactinomycin D staining with 5 μg/mL, 10 μg/mL, and 20 μg/mL, but not with 1 μg/mL, is suitable for quantification of apoptosis in flow cytometry[1].

?7-Aminoactinomycin D is frequently used to stain and exclude dead cells in flow cytometry at low concentrations (0.5-5 μg/mL). At higher concentrations (10-20 μg/mL), 7-Aminoactinomycin D has also been used to distinguish between viable cells ($7\text{-AAD}_{negative}$) and apoptotic cells (7-AAD_{dim}) or dead cells (7-AAD_{bright}) using the fact that permeability of the cell membrane, and hence fluorescence intensity, is low in early apoptotic cells and high in late apoptotic and dead cells[1].

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

CUSTOMER VALIDATION

- Pharmacol Res. 2022 Dec 16;106613.
- Parasit Vectors. 2022 Sep 24;15(1):337.
- SSRN. 2023 Nov 28.
- STAR Protoc. 2023 Dec 15, 4 (4), 102620.

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REFERENCES

[1]. Wadkins RM, et al. Actinomycin D and 7-aminoactinomycin D binding to single-stranded DNA. Biochemistry. 1991 Oct 1;30(39):9469-78.

[2]. Nadine C L Zembruski, et al. 7-Aminoactinomycin D for apoptosis staining in flow cytometry. Anal Biochem. 2012 Oct 1;429(1):79-81.

[3]. Hanen Sellami, et al. Molecular detection of Chlamydia trachomatis and other sexually transmitted bacteria in semen of male partners of infertile couples in Tunisia: the effect on semen parameters and spermatozoa apoptosis markers. PLoS One. 2014 Jul 14;9(7):e98903.

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