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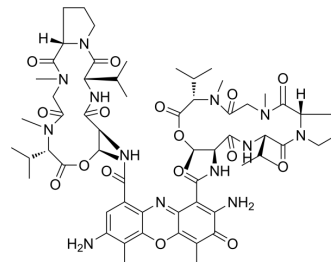
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7-Aminoactinomycin D

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	Solvent Concentration	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-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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Caution: Product has not been fully validated for medical applications. For research use only.

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