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PRODUCT INFORMATION



PAMAM Dendrimer G4.0 Succinamic Acid (water solution)

Item No. 39121

Synonyms:	PAMAM G4.0 Succinamic Acid, Polyamidoamine Dendrimer G4.0 Succinamic Acid
FW:	20,615.0
Supplied as:	A solution in water
Storage:	-20°C
Stability:	≥2 years

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Description

PAMAM dendrimer G4.0 succinamic acid (PAMAM G4.0-SAH) is a polyamidoamine (PAMAM) dendrimer with succinamic acid termini that has been used as a drug delivery system *in vitro* and *in vivo*.^{1,2} It is approximately 45 Å in diameter in PBS and has 64 surface groups.^{3,4} PAMAM G4.0-SAH (10 µM) inhibits plaque formation induced by Middle East respiratory syndrome coronavirus (MERS-CoV) in infected Vero cells.⁴ It is active against *S. aureus*.⁵ Lipid-dendrimer hybrid nanoparticles containing PAMAM G4.0-SAH and encapsulating the glycopeptide antibiotic vancomycin (Item No. 15327) are active against *S. aureus* and methicillin-resistant *S. aureus* (MRSA).¹ *In vivo*, PAMAM G4.0-SAH conjugated to the monosaccharide sialic acid, also known as N-acetylneuraminic acid (Neu5Ac), prevents infection by the influenza A subtype H3N2 in a mouse model of pneumonitis when administered at a dose of 9 µg/g.²

References

1. Sonawane, S.J., Kalhapure, R.S., Rambharose, S., *et al.* Ultra-small lipid-dendrimer hybrid nanoparticles as a promising strategy for antibiotic delivery: In vitro and in silico studies. *Int. J. Pharm.* **504(1-2)**, 1-10 (2016).
2. Landers, J.J., Cao, Z., Lee, I., *et al.* Prevention of influenza pneumonitis by sialic acid-conjugated dendritic polymers. *J. Infect. Dis.* **186(9)**, 1222-1230 (2002).
3. Dobrovolskaia, M.A., Patri, A.K., Simak, J., *et al.* Nanoparticle size and surface charge determine effects of PAMAM dendrimers on human platelets *in vitro*. *Mol. Pharm.* **9(3)**, 382-393 (2012).
4. Kandeel, M., Al-Taher, A., Park, B.K., *et al.* A pilot study of the antiviral activity of anionic and cationic polyamidoamine dendrimers against the Middle East respiratory syndrome coronavirus. *J. Med. Virol.* **92(9)**, 1665-1670 (2020).
5. Altaher, Y. and Kandeel, M. Structure-activity relationship of anionic and cationic polyamidoamine (PAMAM) dendrimers against *Staphylococcus aureus*. *J. Nanomater.* 4013016 (2022).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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