PRODUCT INFORMATION

PAMAM Dendrimer G3.0 Amidoethanol (water solution)

Item No. 39112

Synonyms: PAMAM 3.0 Amidoethanol, Polyamidoamine Dendrimer G3.0 Amidoethanol

MF: $[NH_2(CH_2)_2NH_2]$:(G=3);dendri PAMAM$(NHCH_2CH_2OH)_{32}$

$[NH_2(CH_2)_2NH_2]$:(G=3);dendri PAMAM$(NHCH_2CH_2OH)_{32}$

FW: 6,940.4

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 G3.0 amidoethanol (PAMAM G3.0 amidoethanol) is a polyamidoamine (PAMAM) dendrimer with hydroxyl termini.[1] It is approximately 30 Å in diameter in PBS and has 32 surface groups. PAMAM G3.0 amidoethanol is an antagonist for the pore-forming channels anthrax protective antigen 63 (PA63) in lipid membranes (IC_{50} = 44.9 nM).[2] It inhibits aggregation of amylin containing a serine-to-glycine substitution at position 20 (amylin^{S20G}) in a concentration-dependent manner and amylin^{S20G}-induced toxicity in MIN6-K8 and NIT-1 pancreatic β-cells at 6 µM.[3] Topical application of PAMAM G3.0 amidoethanol (1 mg/ml) encapsulating the synthetic glucocorticoid dexamethasone (Item No. 11015) increases the levels of dexamethasone in the sclera, conjunctiva, and cornea in isolated rabbit eyes.[4] It reduces tail growth in *C. riparius* larvae and induces DNA damage in a comet assay using *C. riparius* larval homogenates when used at concentrations of 10 or 100 ppm.[5]

References

1. 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).
2. Förstner, P., Bayer, F., Kalu, N., *et al.* Cationic PAMAM dendrimers as pore-blocking binary toxin inhibitors. *Biomacromolecules* **15(7)**, 2461-2474 (2014).
3. Gurzov, E.N., Wang, B., Pilkington, E.H., *et al.* Inhibition of hIAPP amyloid aggregation and pancreatic β-cell toxicity by OH-terminated PAMAM dendrimer. *Small* **12(12)**, 1615-1626 (2016).
4. Yavuz, B., Pehlivan, S.B., Vural, İ., *et al. In vitro/in vivo* evaluation of dexamethasone--PAMAM dendrimer complexes for retinal drug delivery. *J. Pharm. Sci.* **104(11)**, 3814-3823 (2015).
5. Planelló, R., Rosal, R., Aquilino, M., *et al.* Genotoxic effects and transcriptional deregulation of genetic biomarkers in *Chironomus riparius* larvae exposed to hydroxyl- and amine-terminated generation 3 (G3) polyamidoamine (PAMAM) dendrimers. *Sci. Total Environ.* **774**, 145828 (2021).

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