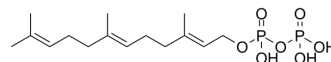


Farnesyl pyrophosphate

Cat. No.:	HY-113037
CAS No.:	13058-04-3
Molecular Formula:	C ₁₅ H ₂₈ O ₇ P ₂
Molecular Weight:	382.33
Target:	Endogenous Metabolite; TRP Channel
Pathway:	Metabolic Enzyme/Protease; Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Farnesyl pyrophosphate (Farnesyl diphosphate), a 15-carbon isoprenoid, is a metabolic intermediate of the mevalonate (MVA) pathway. Farnesyl pyrophosphate is a TRPM2 (TRP Channel) agonist, activates TRPM2 opening for ion influx. Farnesyl pyrophosphate is a key branch substrate for cholesterol synthesis, ubiquinones synthesis, protein farnesylation decoration, and geranyl-geranyl pyrophosphate (GGPP) synthesis ^[1] .
In Vitro	Farnesyl pyrophosphate functions as an identified danger signal to trigger acute cell death leading to neuron loss in stroke. Harboring both a hydrophobic 15-carbon isoprenyl chain and a heavily charged pyrophosphate head, Farnesyl pyrophosphate leads to acute cell death independent of its downstream metabolic pathways. Mechanistically, extracellular calcium influx and the cation channel transient receptor potential melastatin 2 (TRPM2) exhibit essential roles in Farnesyl pyrophosphate-induced cell death. Farnesyl pyrophosphate activates TRPM2 opening for ion influx ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	In terms of a mouse model constructing by middle cerebral artery occlusion (MCAO), Farnesyl pyrophosphate accumulates in the brain, which indicates the function of the Farnesyl pyrophosphate and TRPM2 danger signal axis in ischemic injury. Farnesyl pyrophosphate/TRPM2 signaling axis and the MVA pathway exhibit important roles in brain ischemia and potentially neurodegenerative diseases ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Jing Chen, et al. Farnesyl pyrophosphate is a new danger signal inducing acute cell death. PLoS Biol. 2021 Apr 26;19(4):e3001134.

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

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