

Small Molecules

Methylcobalamin

Vitamin B12 analog

Catalog #100-0895

100 mg



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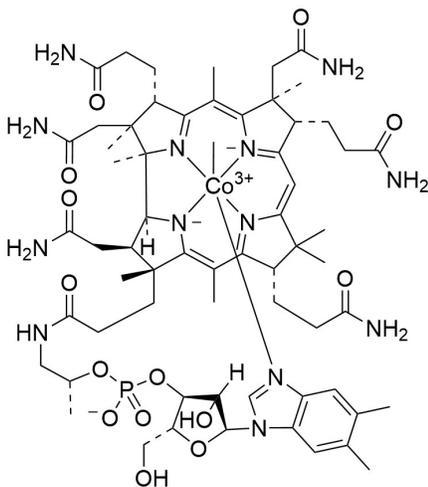
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Product Description

Methylcobalamin is a vitamin B12 analog and a coenzyme involved in homocysteine metabolism (Okada et al.). Methylcobalamin elevates the activities of ERK1/2 and AKT and improves nerve regeneration in rats (Okada et al.). This small molecule has therapeutic potential for treating nervous disorders (Okada et al.).

Alternative Names:	Alcobaz; Co-Methylcobalamin; MeCbl; Mecobalamin; Methyl Vitamin B12
CAS Number:	13422-55-4
Chemical Formula:	C ₆₃ H ₉₁ CoN ₁₃ O ₁₄ P
Molecular Weight:	1344.4 g/mol
Purity:	≥ 98%
Chemical Name:	co-methyl-cobinamide, dihydrogen phosphate (ester), inner salt, 3'-ester with (5,6-dimethyl-1- α -D-ribofuranosyl-1H-benzimidazole- κ N3)

Structure:



Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect product from prolonged exposure to light. For long-term storage, store with a desiccant. Stable as supplied for 12 months from date of receipt.
Solubility:	<ul style="list-style-type: none">· PBS (pH 7.2) ≤ 2.2 mM· DMSO ≤ 3.7 mM· Absolute ethanol ≤ 2.2 mM

For example, to prepare a 1 mM stock solution in PBS, resuspend 10 mg in 7.4 mL of PBS.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

DIFFERENTIATION

- Promotes Schwann cell differentiation in vitro (Nishimoto et al.).

DISEASE MODELING

- Promotes neuronal survival in rats (Okada et al.).

References

Nishimoto S et al. (2015) Methylcobalamin promotes the differentiation of Schwann cells and remyelination in lysophosphatidylcholine-induced demyelination of the rat sciatic nerve. *Front Cell Neurosci* 9: 298.

Okada K et al. (2010) Methylcobalamin increases Erk1/2 and Akt activities through the methylation cycle and promotes nerve regeneration in a rat sciatic nerve injury model. *Exp Neurol* 222(2): 191–203.

Related Small Molecules

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