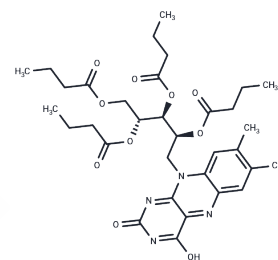


Riboflavin Tetrabutryate

Chemical Properties

| | |
|-------------------|---|
| CAS No. : | 752-56-7 |
| Formula: | C ₃₃ H ₄₄ N ₄ O ₁₀ |
| Molecular Weight: | 656.72 |
| Storage: | Powder: -20°C for 3 years In solvent: -80°C for 1 year Actual storage temperature shall be subject to the COA. |



Biological Description

| | |
|---------------|--|
| Description | Riboflavin Tetrabutryate, a lipophilic flavin derivative, possesses antioxidative and lipid peroxide-removing activities. |
| Targets(IC50) | Reactive Oxygen Species, ROS |
| In vitro | Riboflavin Tetrabutryate effectively suppresses NADPH-coupled and ascorbate-induced microsomal lipid peroxidation, also inhibiting oxygen uptake during such peroxidation. It appears to exert its antioxidative effects during or after the enzymic oxidation-reduction process, specifically after the abstraction of a hydrogen atom as a free radical from the active methylene group in polyunsaturated fatty acids[1]. |
| In vivo | Riboflavin Tetrabutryate may enhance lipid metabolism in patients with atherosclerosis, diabetes, and fatty liver by inhibiting lipid peroxidation, resulting in decreased serum lipid levels. Prolonged administration increases hepatic 3-ketoacyl-CoA thiolase activity, promoting beta-oxidation of fatty acids in the liver, without affecting renal 3-ketoacyl-CoA thiolase, hepatic or renal acyl-CoA synthetase, and acyl-CoA dehydrogenase activities [1][2]. |

Solubility Information

| | |
|------------|--|
| Solubility | DMSO: 125 mg/mL (190.34 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble) |
|------------|--|

Preparing Stock Solutions

| | 1mg | 5mg | 10mg |
|-------|-----------|-----------|------------|
| 1 mM | 1.5227 mL | 7.6136 mL | 15.2272 mL |
| 5 mM | 0.3045 mL | 1.5227 mL | 3.0454 mL |
| 10 mM | 0.1523 mL | 0.7614 mL | 1.5227 mL |
| 50 mM | 0.0305 mL | 0.1523 mL | 0.3045 mL |

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Tahara K, et al. Effect of riboflavin and riboflavin 2',3',4',5'-tetrabutryate on rat liver microsomal lipid peroxidation. *J Nutr Sci Vitaminol (Tokyo)*. 1974;20(2):81-8.

Okuno E, et al. Effect of chronic administration of riboflavin 2',3',4',5'-tetrabutryate on the hepatic enzymes of fatty acid oxidation in the rat. *J Nutr Sci Vitaminol (Tokyo)*. 1983 Dec;29(6):637-42.

Yagi K, et al. Studies on fatty acid esters of flavins. VI. Incorporation of riboflavin part of riboflavin tetrabutryate-2-¹⁴C into flavin nucleotides in the organs of rat. *J Vitaminol (Kyoto)*. 1969 Jun 10;15(2):155-9.

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