Teprenone (Geranylgeranylacetone, GGA)

PRODUCT IN FOCUS

EXSYN® ESSENTIAL CHEMISTRY

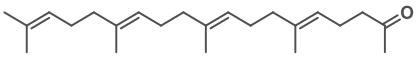
Teprenone (Geranylgeranylacetone; GGA)

INTRODUCTION

Teprenone (Geranylgeranylacetone, GGA) is a mixture of the all-*trans* and mono-*cis* isomers of 6,10,14,18-tetramethyl-5,9,13,17-nonadecatetraen-2-one (in a weight ratio of 3:2). It is an acyclic isoprenoid compound with a structure like retinoids and is widely used for the treatment of gastrointestinal ulcers.

MANUFACTURE

Geraniol is first transformed into geranyl acetone through a two-step process involving *in-situ* bromination and substitution followed by decarboxylation. The resulting geranyl acetone is then converted to *trans*-farnesol *via* a Wittig reaction, followed by reduction of the corresponding ester. Subsequently, *trans*-farnesol undergoes a series of controlled reactions, including tosylation, substitution, decarboxylation, Grignard reaction, and oxidation, ultimately yielding teprenone.

Synonyms	6,10,14,18-Tetramethyl-5,9,13,17-nonadecatetraen-2-one; Selbex
CAS no.	6809-52-5
EC no.	614-276-0
Molecular formula	$C_{23}H_{38}O$
Molecular weight	330.55
Structure	

APPLICATIONS

Geranylgeranylacetone has several industrial and pharmaceutical applications due to its low toxicity and strong cytoprotective effects

Pharmaceuticals

Marketed as Teprenone serves as an important isoprenoid intermediate in pharmaceutical synthesis.

- Used for treatment of gastric ulcers and protection of gastric mucosa.
- Prevention and treatment of viral hepatitis, particularly in the prevention and treatment of hepatitis B and hepatitis C.

Skin Protection, Cytoprotective & Anti-Aging applications

- It is known to induce heat shock proteins (HSP70) and enhances cellular protection against stress.
- Teprenone can protect cells in various organs, such as the eye, brain, and heart.
- Protection against oxidative stress.

Potential Therapeutic Areas (Research Stage)

Used for:

- Treatment of neurodegenerative diseases (e.g., Alzheimer's, Parkinson's)
- Cardiovascular protection
- Liver protection.

Industrial / Chemical Use

- Intermediate in terpenoid chemistry research
- Used in biochemical studies involving isoprenoid pathways.

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SPECIFICATIONS

Test	Unit	Specification
Appearance	-	Colorless to light yellow or orange oily liquid
Purity (GC) (Two isomers)	% area	Not less than 99.0
Identification by IR	-	Should Conform to structure of the molecule
Water content (KF)	% w/w	Not more than 0.50
n-Heptane (GC-RS)	ppm	Not more than 5000

STORAGE & PRECAUTION
Store at 2-8 °C in a well closed container.

PACKING
Globally compliant packaging

REACH Status
Not registered

ExSyn offers Teprenone on commercial scales and welcomes enquiries. No matter the quantity you need, our exceptional quality and service will make ExSyn your supplier of choice! If you need any additional information or SDS, please contact us.