

N-Biotinyl dopamine

CAS # 241142-94-9

EXIM-INDIS INC
EVOLVING CHEMISTRY

Product In Focus

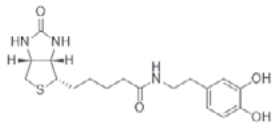
N-Biotinyl dopamine

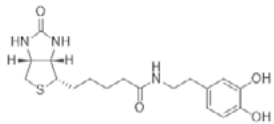
INTRODUCTION

N-Biotinyl dopamine is a bifunctional chemical probe linking biotin to dopamine, commonly used in neuroscience and proteomics research. It acts as a redox-active tool for studying dopamine receptor localization, mobility, and interacting proteins.

N-Biotinyl dopamine is a synthetic biotinylated derivative of dopamine, specifically the (3aS,4S,6aR)-N-[2-(3, 4-dihydroxyphenyl)ethyl] hexahydro-2-oxo-1H-thieno[4-d]imidazole-4-pentanamide compound. This white-to-off-white solid acts as a bifunctional labeling reagent designed for biochemical research, including proteomics and cell surface dopamine receptor detection.

KEY DETAILS

CAS No	241142-94-9
Formula	C ₁₈ H ₂₅ N ₃ O ₄ S
Molecular Weight	379.47 g/mol
Alternative Name	(3aS,4S,6aR)-N-[2-(3, 4-dihydroxyphenyl)ethyl] hexahydro-2-oxo-1H-thieno[4-d]imidazole-4-pentanamide
Appearance	White to off-white solid
Structure	



MANUFACTURE

The synthesis typically involves the coupling of biotin (or a biotin derivative) with dopamine. A common synthetic route is the amide bond formation between the carboxylic acid group of biotin and the primary amine group of dopamine, often catalyzed by coupling agents in organic solvent systems.

APPLICATION

Pharmaceutical / Biomedical Research

- Used as a biotin-labeled dopamine derivative in receptor-binding and neurotransmitter studies
- Supports targeted drug-delivery & bio-conjugation research
- Used in studies involving dopamine transporters and dopamine receptor interactions
- Helps evaluate neurochemical pathways and neurological disease mechanisms

Biotechnology / Molecular Biology

- Used as a biotinylation reagent for affinity-based assays and detection systems
- Supports streptavidin-biotin interaction studies in diagnostic and analytical platforms
- Used in probe development for imaging and biomolecular tracking applications
- Helps functionalize biomaterials and surfaces for biosensor research

Nanotechnology / Materials Science

- Used in preparation of dopamine-based surface coatings and bioadhesive materials
- Supports nanoparticle surface modification and targeted conjugation systems
- Applied in development of bioinspired polymeric and catechol-functional materials

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SPECIFICATIONS

Test	Specification
Description	White to off white powder
Purity	95%

STORAGE & PRECAUTION

Store at ambient conditions

PACKING

Custom packing available upon request

GMP STATUS

Manufactured under cGMP or non GMP conditions based on customer specifications and intended application.

Exim-Indis offers N-Biotinyl dopamine on commercial scales and welcomes enquiries. No matter the quantity you need, our exceptional quality and service will make Exim-Indis your supplier of choice. If you need any additional information or SDS, please contact us.