PRODUCT IN FOCUS

EXSYN®
ESSENTIAL CHEMISTRY

Colchicine

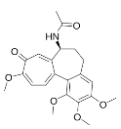
INTRODUCTION

Colchicine is a naturally occurring alkaloid obtained primarily from the autumn crocus (*Colchicum autumnale*) and related species.

It has been used in medicine for centuries, especially for the treatment of gout and Familial Mediterranean Fever. In modern medicine, Colchicine is valued also in conditions like pericarditis, Behçet's disease, and certain dermatological and cardiac disorders.

MANUFACTURE

1. **Plant Source**: Primarily obtained from *Colchicum autumnale* corms and seeds.
2. **Extraction Process**: Plant material is dried and powdered. Extracted with acidified water or alcohol (e.g., ethanol or methanol). Colchicine is then isolated by solvent extraction, followed by purification via crystallization.
3. **Purification**: May involve chromatographic techniques/solvent partitioning to improve purity.

Synonym	N-((7S)-1,2,3,10-tetramethoxy-9-oxo-5,6,7,9-tetrahydrobenzo[a]heptalen-7-yl)acetamide
CAS no.	64-86-8
EINECS no.	200-598-5
Molecular formula	$C_{22}H_{25}NO_6$
Molecular weight	399.44
Structure	

APPLICATIONS

- **Medical Applications:**
  - Gout Treatment
    - ✓ Used to relieve acute gout attacks by reducing inflammation and crystal-induced joint damage.
    - ✓ Acts by inhibiting neutrophil activity and microtubule polymerization.
  - Familial Mediterranean Fever (FMF)
    - ✓ Colchicine is the first-line treatment to prevent and reduce flare-ups.
  - Pericarditis
    - ✓ Used as an adjunct therapy to reduce recurrence in pericardial inflammation.
  - Behçet's Disease
    - ✓ Sometimes used for mucocutaneous and articular symptoms.
  - Anti-mitotic Agent
    - ✓ Prevents spindle formation in dividing cells, thus used experimentally in cancer and cytogenetic research.

- **Research and Laboratory Applications:**
  - Mitotic Inhibitor
    - ✓ Blocks cell division at metaphase, useful in preparing karyotypes for chromosome analysis.
  - Plant Breeding
    - ✓ Induces polyploidy (chromosome doubling) in plants to create new crop varieties with improved traits.

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SPECIFICATIONS - Ph.Eur/BP

Test	Unit	Specification
Description	-	Yellowish-white amorphous or crystalline powder
Solubility	-	Very soluble in water, rapidly recrystallizing from concentrated solutions as the sesquihydrate, freely soluble in alcohol, practically insoluble in cyclohexane.
Identification	-	Should conform to IR Spectrophotometry
Appearance of solution	-	Solution S should be clear and not more intensely colored than reference solution GY
Acidity or Alkalinity	-	Should comply
Specific optical rotation	°	-235 to -250 (anhydrous substance)
Related substance		
Impurity A	%	NMT 3.5
Impurity B	%	NMT 1.0
Impurity C	%	NMT 1.0
Impurity D	%	NMT 1.0
Impurity E	%	NMT 1.0
Unspecified impurities	%	NMT 0.1
Total impurities	%	NMT 5.0
Colchicine	%	NMT 0.2
Chloroform	ppm	NMT 500
Ethyl acetate	%	NMT 6.0
Water content	%	NMT 2.0
Sulphated ash	%	NMT 0.1
Assay (anhydrous substance)	%	97.0 to 102.0

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SPECIFICATIONS - Ph.Eur/BP

Test	Unit	Specification
Additional test		
Residual solvents		
Methanol	ppm	NMT 3000
Ethyl alcohol	ppm	NMT 5000
Dichloromethane	ppm	NMT 600
Benzene	ppm	NMT 2

PACKING
25 kg UN approved drum with inner packing 1 kg.

STORAGE
Store in tightly closed container at ambient conditions, well-ventilated place.

CERTIFICATION
WHO-GMP, Written Confirmation (WC) and DMF.

ExSyn offers Colchicine on commercial scales and welcomes enquiries. Our exceptional quality and service will make ExSyn your supplier of choice! If you need any additional information or SDS, please contact us.