

U.S. Department of Health & Human Services (<http://www.hhs.gov/>)
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National Institutes of Health (<http://www.nih.gov/>)

NCATS

GLUCONOLACTONE

WQ29KQ9POT

👍 US Approved Rx (2016) ⓘ

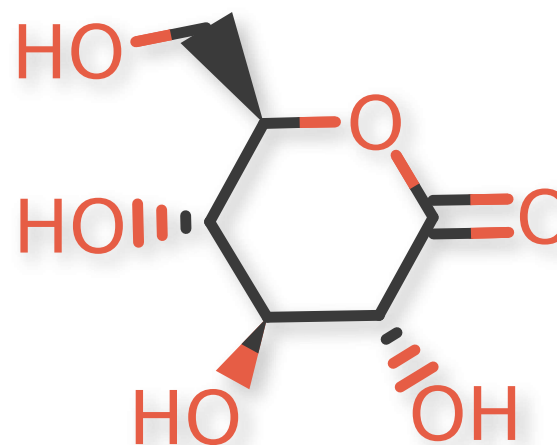
First approved in 1991 ⓘ

▼ Structure



Details ⓘ

Stereochemistry	ABSOLUTE
Molecular Formula	C6H10O6
Molecular Weight	178.14
Optical Activity	UNSPECIFIED
Defined Stereocenters	4 / 4
E/Z Centers	0
Charge	0

SHOW SMILES / InChI ▼



SHOW STEREO...





(/structure
q=16bb65
a3cf-
4d60-
8b9f-
2e936a47

▼ General

Description

Gluconolactone, a lactone of D-glucuronic acid, is a food additive with the E number E575. Gluconolactone is commonly found in honey, fruit juices, wine. In medicine, gluconolactone is used as a component of irrigation solution Renacidin for dissolution of bladder calculi of the struvite or apatite variety, and to prevent or minimize encrustations of indwelling urinary tract catheters.

Originator

Guardian Chemical 1 ([/substances?facet=Originator%2FGuardian Chemical](/substances?facet=Originator%2FGuardian%20Chemical))  

Approval Year

1991 88 ([/substances?facet=Approval Year%2F1991](/substances?facet=Approval%20Year%2F1991))

▼ Activity

Targets  ()

Conditions  ()

Primary Target

Calcium 6 ([/substances?facet=Primary Target%2FCalcium](/substances?facet=Primary%20Target%2FCalcium)) 

Pharmacology

Chelating Agent 120 ([/substances?facet=Pharmacology%2FChelating Agent](/substances?facet=Pharmacology%2FChelating%20Agent))

Condition

Urinary Catheterization



▼ Publications

PubMed  ()

Patents  ()

Show entries

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Title	Date	PubMed
Simultaneous determination of gluconolactone, galactonolactone and galactitol in urine by reversed-phase liquid chromatography: application to galactosemia.	1991 Oct 4	1797843 (https://www.ncbi.nlm.nih.gov/pubmed/1797843)
Adsorption behavior of surface-chemically pure N-alkyl-N-(2-hydroxyethyl)aldonamides at the air/water interface.	2004 Mar 2	15801414 (https://www.ncbi.nlm.nih.gov/pubmed/15801414)
Inhibitory effect of naturally occurring flavonoids on the formation of advanced glycation endproducts.	2005 Apr 20	15826074 (https://www.ncbi.nlm.nih.gov/pubmed/15826074)
Adsorption behavior of surface chemically pure N-cycloalkylaldonamides at the air/water interface.	2005 Apr 26	15835969 (https://www.ncbi.nlm.nih.gov/pubmed/15835969)
Purification and characterization of an intracellular beta-glucosidase from the methylotrophic yeast <i>Pichia pastoris</i> .	2005 Dec	16417459 (https://www.ncbi.nlm.nih.gov/pubmed/16417459)

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▼ Application

Sample Use Guides

In Vivo Use Guide

For dissolution of bladder calculi, 30 mL (one container) of Renacidin should be instilled into the bladder via a urethral catheter or cystostomy tube. For prevention of encrustations in urethral catheters and cystostomy tube, 30 mL (one container) of Renacidin should be instilled into the urethral catheter or cystostomy tube. As a food additive, gluconolactone is administered orally.

Route of Administration: bladder irrigation; oral






In Vitro Use Guide

Chemolysis rate was tested using an in-vitro urinary-tract model. A laboratory-proved large human struvite stone was divided into 3.5-g fragments, which were placed in the model. In the experimental group, Renacidin irrigation was performed through the high-flow low-pressure irrigation system. In the control group, Renacidin solution was infused at 120 mL/hour through a nephrostomy tube. The overall chemolysis rates with the high-flow low-pressure irrigation and control systems were 0.12 g/hr and 0.06 g/hr, respectively.

▼ Names

Show entries

Search...

Name	Type	Language
GLUCONOLACTONE ✓	 Official Name	English
GLUCONOLACTONE [WHO-DD]	 Common Name	English
GLUCONO .DELTA. LACTONE	 Common Name	English
GLUCONOLACTONE [MART.]	 Common Name	English
LYSACTONE	 Common Name	English











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▼ Classification

Show entries

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Classification Tree	Code System	Code
 <div style="border: 1px solid blue; padding: 2px;"> RAISING AGENT (/substances? q=comments:%22JECFA Functional Classification ACID ACIDITY REGULATOR RAISING AGENT%22) </div>	 JECFA EVALUATION	INS-575 http://apps.who.int/food-additives-contaminants-jecfa-database/chemical.aspx?chemINS=575
 <div style="border: 1px solid blue; padding: 2px;"> Raising agent (/substances? q=comments:%22Codex Alimentarius Functional Classification Acidity regulator Raising agent%22) </div>	 CODEX ALIMENTARIUS (GSFA)	INS-575 http://www.fao.org/gsfaonline/additives/details.html?id=172
 <div style="border: 1px solid blue; padding: 2px;"> Physiochemical Activity (/substances? q=comments:%22Cellular or Molecular Interactions [MoA] Physiochemical Activity [MoA]%22) </div>	 NDF-RT	N0000175534 https://nciterms.nci.nih.gov/ncitbrowser/ConceptReport.jsp?dictionary=VA_NDFRT&code=N0000175534
 <div style="border: 1px solid blue; padding: 2px;"> Subpart B--Listing of Specific Substances Affirmed as GRAS (/substances? q=comments:%22PART 184 -- DIRECT FOOD SUBSTANCES AFFIRMED AS GENERALLY RECOGNIZED AS SAFE Subpart B-- Listing of Specific Substances Affirmed as GRAS %22) </div>	 CFR	21 CFR 184.1318 http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=184.1318
 <div style="border: 1px solid blue; padding: 2px;"> Established Pharmacologic Class (/substances? q=comments:%22Established Pharmacologic Class [EPC]%22) </div>	 NDF-RT	N0000175835 https://nciterms.nci.nih.gov/ncitbrowser/ConceptReport.jsp?dictionary=VA_NDFRT&code=N0000175835

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▼ Identifiers

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Code System	Code	Type	Description
HSDB	90-80-2 (https://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+hsdb:@term+@rn+@rel+90-80-2)	PRIMARY	
WIKIPEDIA	GLUCONO DELTA-LACTONE (https://en.wikipedia.org/wiki/Glucono_delta-lactone)	PRIMARY	
MERCK INDEX	M5763 (https://www.rsc.org/Merck-Index/monograph/M5763?q=authorize)	PRIMARY	Merck Index
EPA CompTox	90-80-2 (https://comptox.epa.gov/dashboard/dsstoxdb/results?utf8=%E2%9C%93&search=90-80-2)	PRIMARY	
MESH	C010730 (http://www.ncbi.nlm.nih.gov/mesh/67010730)	PRIMARY	

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▼ Related Substances

ACTIVE MOIETY
WQ29KQ9POT
(/substance/WQ29KQ9POT)





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(<mailto:info@ncats.nih.gov>)

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