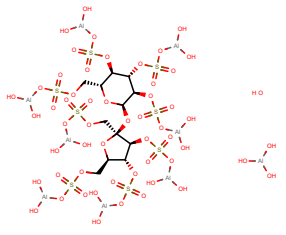
Sucralfate

Targets (4) Biointeractions (5)

IDENTIFICATION

Name	Sucralfate
Accession Number	DB00364 (APRD01238)
Type	Small Molecule
Groups	Approved
Description	Sucralfate is a medication that is widely used to prevent and treat a number of diseases in the gastrointestinal tract such as duodenal ulcers [Label], gastro-esophageal reflux disease (GERD), gastritis, peptic ulcer disease, stress ulcer, in addition to dyspepsia [2]. It is considered a *cytoprotective agent*, protecting cells in the gastrointestinal tract from damage caused by agents such as gastric acid, bile salts, alcohol, and acetylsalicylic acid (aspirin), among other substances [2,13]. Sucralfate has been shown to be a well-tolerated and safe drug. It is sold under many brands and is available in both tablet and suspension forms. It was approved by the FDA 1982 in tablet form, and in 1994 for the suspension form [11,12].

Structure



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Synonyms

Hexadeca-μ-hydroxytetracosahydroxy[μ8-[1,3,4,6-tetra-O-sulfo-β-Dfructofuranosyl-α-D-glucopyranoside tetrakis(hydrogen sulfato)8-)]]hexadecaaluminum

Sucralfat

Sucralfate

Sucralfato

Sucralfatum

External IDs CGA-6J / OS 202

Product Images

Prescription Products

Show 10 entries Search

NAME	DOSAGE	STRENGTH	ROUTE	LABELLER	MARKETING START	MARKETING END		
Carafate	Suspension	1 g/10mL	Oral	Allergan	1993-12-16	Not applicable		
Carafate	Suspension	1 g/10mL	Oral	Physicians Total Care, Inc.	1996-03-12	Not applicable		
Carafate	Tablet	1 g/1	Oral	Allergan, Inc.	1981-10-30	Not applicable		

NAME	DOSAGE	STRENGTH	ROUTE	LABELLER	MARKETING START	MARKETING END		
				Corps				
Sucralfate	Suspension	1 g/10mL	Oral	Cardinal Health	2009-11-19	Not applicable		
Sucralfate	Suspension	1 g/10mL	Oral	Precision Dose Inc.	2003-08-21	Not applicable		
Sucralfate	Suspension	1 g/10mL	Oral	Physicians Total Care, Inc.	2005-05-24	Not applicable		
Sucralfate	Suspension	1 g/10mL	Oral	Cardinal Health	2009-11-19	2017-10-31		
Sucralfate	Tablet	1 g/1	Oral	Remedy Repack	2009-06-18	2017-02-24		
Sucralfate	Suspension	1 g/10mL	Oral	Cardinal Health	2012-08-16	Not applicable		

Showing 1 to 10 of 19 entries ‹ 1 2 ›

Generic Prescription Products

Show 10 entries Search

NAME	DOSAGE	STRENGTH	ROUTE	LABELLER	MARKETING START	MARKETING END		
Apo-sucralfate - Tab 1g	Tablet		Oral	Apotex Corporation	1994-12-31	Not applicable		
Dom-sucralfate	Tablet		Oral	Dominion Pharmacal	1999-09-15	2016-10-25		
Nu-sucralfate - Tab 1gm	Tablet		Oral	Nu Pharm Inc	1994-12-31	2012-09-04		
PMS-sucralfate	Tablet		Oral	Pharmascience Inc	1999-02-23	Not applicable		
Sucralfate	Tablet	1 g/1	Oral	Nostrum Laboratories, Inc.	2009-07-01	2018-01-31		
Sucralfate	Tablet	1 g/1	Oral	Nucare Pharmaceuticals, Inc.	1996-11-11	Not applicable		
Sucralfate	Tablet	1 g/1	Oral	Levista, Inc.	2009-07-01	2011-12-31		
Sucralfate	Tablet	1 g/1	Oral	A-S Medication Solutions	1996-11-11	Not applicable		
Sucralfate	Tablet	1 g/1	Oral	Caremark L.L.C.	1999-07-08	2011-07-31		
Sucralfate	Tablet	1 g/1	Oral	Actavis Pharma, Inc.	1996-11-01	2020-03-31		

Showing 1 to 10 of 47 entries ‹ 1 2 3 4 5 ›

International/Other Brands

Antepsin (Orion) / Sucramal (Menarini) / Sucraxol (Medifarma) / Ulcogant (Merck)

Categories

- Alimentary Tract and Metabolism
- Aluminium Compounds
- Aluminum Complex
- Anti-Ulcer Agents
- Carbohydrates
- Drugs for Acid Related Disorders
- Drugs for Peptic Ulcer and Gastro-Oesophageal Reflux Disease (Gord)
- Drugs that are Mainly Renally Excreted
- Gastrointestinal Agents
- Glycosides
- Metal cations
- Metal divalent cations
- Organometallic Compounds
- Protectants
- Sulfur Compounds
- Thioglycosides

UNII	XX73205DH5
CAS number	54182-58-0
Weight	Average: 1558.67 Monoisotopic: 1557.6045961
Chemical Formula	$C_{12}H_{35}Al_9O_{55}S_8$
InChI Key	IPLJAZDIICJQEL-JTJNLBSYSA-A
InChI	InChI=1S/C12H22O35S8.9Al.20H2O/c13-48(14,15)37-1-4-6(43-51(22,23)24)8(45-53(28,29)30)9(46-54(31,32)33)11(40-4)42-12(3-39-50(19,20)21)10(47-55(34,35)36)7(44-52(25,26)27)5(41-12)2-38-49(16,17)18;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;/h4-11H,1-3H2,(H,13,14,15)(H,16,17,18)(H,19,20,21)(H,22,23,24)(H,25,26,27)(H,28,29,30)(H,31,32,33)(H,34,35,36);;;;;;;;;;20*1H2/q;9*+3;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;/p-27/t4-,5-,6-,7-,8+,9-,10+,11-,12+;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;/m1...../s1
IUPAC Name	[({[(2R,3R,4S,5R,6R)-6-{[(2S,3S,4R,5R)-3,4-bis({[(dihydroxyalumanyl)oxy]sulfonyl}oxy)-2,5-bis[({[(dihydroxyalumanyl)oxy]sulfonyl}oxy)methyl]oxolan-2-yl]oxy}-4,5-bis({[(dihydroxyalumanyl)oxy]sulfonyl}oxy)-2-[({[(dihydroxyalumanyl)oxy]sulfonyl}oxy)methyl]oxan-3-yl]oxy}sulfonyl)oxy]alumanediol alumanetriol hydrate
SMILES	O.O[Al](O)O.O[Al](O)OS(=O)(=O)OC[C@H]1O[C@@](COS(=O)(=O)O[Al](O)O)(O[C@H]2O[C@H](COS(=O)(=O)O[Al](O)O)[C@@H](OS(=O)(=O)O[Al](O)O)[C@H](OS(=O)(=O)O[Al](O)O)[C@H]2OS(=O)(=O)O[Al](O)O)[C@@H](OS(=O)(=O)O[Al](O)O)[C@@H]1OS(=O)(=O)O[Al](O)O

PHARMACOLOGY

Indication	The sucralfate suspension [Label] and tablet [15] are used for the treatment of active duodenal ulcer for up to 8 weeks. The tablet form may be used at a lower dose for healed duodenal ulcers, for the purpose of maintaining healing and preventing recurrence [13,15]. Sucralfate is also used in the prevention and/or treatment of gastro-esophageal reflux disease (GERD), gastritis, peptic ulcer disease, stress ulcer, in addition to dyspepsia [2,13].
Associated Conditions	Gastric Ulcer (GU) Gastritis Gastro-esophageal Reflux Disease (GERD) Healing Indigestion Mucositis Peptic Ulcers Stress Ulcers Active Duodenal ulcer
Pharmacodynamics	This drug aids in the healing of duodenal ulcers, relieving painful inflammation by creating a protective mechanical barrier between the lining or skin of the gastrointestinal tract and damaging substances [2]. In addition, sucralfate acts to increase levels of growth factors locally, and also causes an increase in prostaglandins which are important in the healing of the mucosa (lining) of the gastrointestinal tract [2].
Mechanism of action	The mechanism of action of this drug in the healing duodenal ulcers is not yet completely defined, however, there are several probable mechanisms that adequately describe the healing activity of sucralfate. There is evidence that sucralfate acts locally to aid in tissue healing, and not systemically [Label]. Studies in both humans and animals have indicated that sucralfate forms a complex that binds to protein-rich exudate found on the surface of ulcers. It binds to albumin and fibrinogen [7,8] preventing blood clot lysis by stomach acid (hydrochloric acid). Sucralfate increases the tissue levels of fibroblast growth factors and epidermal growth factors [6], leading to an increase in prostaglandins at the gastrointestinal tract lining, which promote the healing of gastrointestinal ulcers [2].

In the laboratory setting, a sucralfate-albumin film provides a barrier against the entry of hydrogen ions, which are a component of gastric acid. In humans, sucralfate, given at therapeutic doses for ulcers, decreases pepsin activity in gastric fluids by 32% [Label]. Pepsin has been shown

implicated in mucosal injury to the gastrointestinal tract. Sucralfate has also been shown to adsorb bile salts in the laboratory, setting, which could further contribute to its beneficial effects in ulcer healing [Label].

TARGET	ACTIONS	ORGANISM
A Pepsin A-5	inhibitor	Humans
A Fibroblast growth factor 2	agonist inducer	Humans
A Pro-epidermal growth factor	inducer	Humans
U Fibrinogen	binder protector	Humans

Absorption	This drug is absorbed from the gastrointestinal tract in very minimal quantities [Label]. The adsorbed sulfated disaccharide is excreted in the urine [13]. This drug contains aluminum and after the administration of 1 g of sucralfate 4 times per day, about 0.001% to 0.017% of this aluminum content is absorbed in patients with normal renal function [13]. This number is expected to increase in those with impaired renal function [13].
Volume of distribution	This drug is absorbed in a very small quantity, and normally localizes to inflamed gastrointestinal lesions [Label].
Protein binding	Sucralfate is bound to plasma proteins, especially albumin and transferrin [13].
Metabolism	This drug is absorbed in very small quantities and is not significantly metabolized [Label,13].
Route of elimination	The negligible amount of this drug that is absorbed is excreted mainly in the urine within 48 hours [Label,16].
Half life	The half-life is not known. In animals, the elimination half-life of the sucrose component of this drug is from 6-20 h [16].
Clearance	Sucralfate contains aluminum. The administration of sucralfate in non-dialyzed chronic renal failure patients warrants careful consideration from the treating physician as the excretion of absorbed aluminum may be decreased, causing possible aluminum toxicity [13]. In dialyzed patients diagnosed with chronic renal failure, aluminum toxicity related to sucralfate has been observed and reported. The daily amount of aluminum ingestion (including sucralfate) should be carefully examined before administering sucralfate in combination with other drugs also containing aluminum, including various antacids [13]

also containing aluminum, including various antacids [Label].

Toxicity	**Overdose**

The lethal dose could not be determined in these studies [13]. It is likely that overdose of sucralfate in humans would result in constipation, and supportive treatment would be advised [13].

Use in pregnancy

This drug is considered a pregnancy Category B drug. Studies have been performed in rodents and rabbits at doses up to 50 times the recommended human dose. No harm to the fetus has been observed in the abovementioned studies. Sufficient and well-controlled clinical trials have not been performed in pregnant women. Due to the fact that the results of animal studies are not always relevant to human response, sucralfate should be used during pregnancy only if it is deemed essential for the mother's health [Label].

Use in nursing

Whether this drug is excreted in human milk is currently unknown. Many drugs are excreted in breast milk, therefore, if sucralfate is administered to a lactating and nursing woman, caution should be observed [Label].

Carcinogenesis

24 month toxicity studies were performed in rodents, and the dose of sucralfate reached up to 1 g/kg (equivalent to 12 times the recommended human dose). No signs of sucralfate-related tumors were noted[Label].

Affected organisms	Humans and other mammals
Pathways	Not Available
Pharmacogenomic Effects/ADRs	Not Available

INTERACTIONS

Drug Interactions

This information should not be interpreted without the help of a healthcare provider. If you believe you are experiencing an interaction, contact a healthcare provider immediately. The absence of an interaction does not necessarily mean no interactions exist.

ALL DRUGS | APPROVED | VET APPROVED | NUTRACEUTICAL | ILLICIT | WITHDRAWN | INVESTIGATIONAL | EXPERIMENTAL

Show 10 entries Search

DRUG	INTERACTION
(R)-warfarin	The therapeutic efficacy of (R)-warfarin can be decreased when used in combination with Sucralfate.
(S)-Warfarin	The therapeutic efficacy of (S)-Warfarin can be decreased when used in combination with Sucralfate.
1alpha-Hydroxyvitamin D5	The serum concentration of Sucralfate can be increased when it is combined with 1alpha-Hydroxyvitamin D5.
1alpha,24S-Dihydroxyvitamin D2	The serum concentration of Sucralfate can be increased when it is combined with 1alpha,24S-Dihydroxyvitamin D2.
3-Aza-2,3-Dihydrogeranyl Diphosphate	Sucralfate can cause a decrease in the absorption of 3-Aza-2,3-Dihydrogeranyl Diphosphate resulting in a reduced serum concentration and potentially a decrease in efficacy.
4-hydroxycoumarin	The therapeutic efficacy of 4-hydroxycoumarin can be decreased when used in combination with Sucralfate.
Abacavir	Sucralfate may decrease the excretion rate of Abacavir which could result in a higher serum level.

ADDITIONAL DATA AVAILABLE

DRUG	INTERACTION
Abafungin	Sucralfate can cause a decrease in the absorption of Abafungin resulting in a reduced serum level.
Aceclofenac	Aceclofenac may decrease the excretion rate of Sucralfate which could result in a higher serum level.

Showing 1 to 10 of 878 entries

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Food Interactions

Avoid alcohol.

Do not take calcium, aluminum, magnesium or Iron supplements within 2 hours of taking this medication.

Take on empty stomach: 1 hour before or 2 hours after meals.

Take with a full glass of water.

REFERENCES

Synthesis Reference

Nick V. Lazaridis, Moo K. Park, Yousry Sayed, "Method for preparing high potency sucralfate." U.S. Patent US4990610, issued March, 1973.
US4990610

General References

1. Rees WD: Mechanisms of gastroduodenal protection by sucralfate. Am J Med. 1991 Aug 8;91(2A):58S-63S. [PubMed:1715673]
2. Candelli M, Carloni E, Armuzzi A, Cammarota G, Ojetti V, Pignataro G, Santoliquido A, Pola R, Pola E, Gasbarrini G, Gasbarrini A: Role of sucralfate in gastrointestinal diseases. Panminerva Med. 2000 Mar;42(1):55-9. [PubMed:11019606]
3. Lam SK: Why do ulcers heal with sucralfate? Scand J Gastroenterol Suppl. 1990;173:6-16. [PubMed:2190306]
4. Bardhan KD, Strugala V, Dettmar PW: Reflux revisited: advancing the role of pepsin. Int J Otolaryngol. 2012;2012:646901. doi: 10.1155/2012/646901. Epub 2011 Nov 10. [PubMed:22242022]
5. Szabo S: The mode of action of sucralfate: the 1 x 1 x 1 mechanism of action. Scand J Gastroenterol Suppl. 1991;185:7-12. [PubMed:1957124]
6. Korman MG, Bolin TD, Szabo S, Hunt RH, Marks IN, Glise H: Sucralfate: the Bangkok review. J Gastroenterol Hepatol. 1994 Jul-Aug;9(4):412-5. [PubMed:7948825]
7. Terao N, Yoshida N, Nagashima R: Sucralfate, a basic aluminum salt of sucrose sulfate. III. Inhibition of peptic hydrolysis of fibrinogen by sucrose sulfate. Arzneimittelforschung. 1980;30(1):76-8. [PubMed:6892775]
8. Patchett SE, Enright H, Afdhal N, O'Connell W, O'Donoghue DP: Clot lysis by gastric juice: an in vitro study. Gut. 1989 Dec;30(12):1704-7. [PubMed:2612985]
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10. Duane WC, Wiegand DM: Mechanism by which bile salt disrupts the gastric mucosal barrier in the dog. J Clin Invest. 1980 Nov;66(5):1044-9. doi: 10.1172/JCI109932. [PubMed:7430343]
11. FDA approval, Sucralfate suspension [Link]
12. Sucralfate tablet FDA approval [Link]
13. Product monograph, Sulcrate [File]
14. MedSafe NZ, Sucralfate [File]
15. Sucralfate FDA label, tablet form [File]
16. Risk profile of sucralfate [File]

External Links

Human Metabolome Database	HMDB0014508
KEGG Compound	C07314
PubChem Compound	70789197
PubChem Substance	46508862
ChemSpider	32701653
ChEMBL	CHEMBL2029132
PharmGKB	PA451524
RxList	RxList Drug Page
Drugs.com	Drugs.com Drug Page
PDRhealth	PDRhealth Drug Page
Wikipedia	Sucralfate

ATC Codes

A02BX02 — Sucralfate

- A02BX — Other drugs for peptic ulcer and gastro-oesophageal reflux disease (GORD)
- A — ALIMENTARY TRACT AND METABOLISM

AHFS Codes

56:28.32 — Protectants

FDA label

Download (217 KB)

MSDS

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CLINICAL TRIALS

Clinical Trials

Show 10 entries

Search

PHASE	STATUS	PURPOSE	CONDITIONS	COUNT
0	Completed	Treatment	Oesophagitis, Eosinophilic	1
2	Enrolling by Invitation	Supportive Care	Gingivostomatitis / Hand, Foot and Mouth Disease (HFMD) / Herpangina	1
3	Completed	Supportive Care	Head and Neck Carcinoma / Mucositis	1
4	Completed	Treatment	Antimicrobial Drug Susceptibility Pattern / Etiological Organisms / Stress Ulcer Prophylaxis / Ventilator-associated Bacterial Pneumonia	1
4	Completed	Treatment	Chronic Erosive Gastritis	1
4	Completed	Treatment	Chronic Radiation Proctitis	1
4	Completed	Treatment	Indigestion	1
Not Available	Recruiting	Diagnostic	Gastroesophageal Reflux / Non-erosive Reflux Disease (NERD)	1
Not Available	Withdrawn	Diagnostic	Gastro-esophageal Reflux Disease (GERD) / Indigestion / Non Erosive Reflux Disease	1

Showing 1 to 9 of 9 entries

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PHARMACOECONOMICS

Manufacturers

- Axcan pharma us inc
- Nostrum laboratories inc
- Teva pharmaceuticals usa inc

Packagers

- Amerisource Health Services Corp.
- Amneal Pharmaceuticals
- A-S Medication Solutions LLC
- Axcan Pharma Inc.
- Bryant Ranch Prepack
- Cardinal Health
- Caremark LLC
- Dept Health Central Pharmacy
- Direct Dispensing Inc.
- Diversified Healthcare Services Inc.
- Eon Labs
- Giant Food Inc.
- Golden State Medical Supply Inc.
- H.J. Harkins Co. Inc.
- Heartland Repack Services LLC
- Ivax Pharmaceuticals
- Levista Inc.
- Long Wing International Inc.
- Major Pharmaceuticals
- Mckesson Corp.
- Medisca Inc.
- Merckle GmbH
- Murfreesboro Pharmaceutical Nursing Supply
- Nostrum Laboratories Inc.
- Nucare Pharmaceuticals Inc.
- PD-Rx Pharmaceuticals Inc.
- Pharmaceutical Association
- Pharmaceutical Utilization Management Program VA Inc.
- Pharmedix
- Physicians Total Care Inc.
- Prasco Labs
- Precision Dose Inc.
- Prepak Systems Inc.
- Prescript Pharmaceuticals
- Prime European Therapeuticals SPA
- Qingdao Pana Life Biochem Co. Ltd.
- Resource Optimization and Innovation LLC
- Sandhills Packaging Inc.
- Sanofi-Aventis Inc.
- Stat Rx Usa
- Teva Pharmaceutical Industries Ltd.
- UDL Laboratories
- Vangard Labs Inc.
- Vistapharm Inc.
- Warrick Pharmaceuticals Corp.
- Watson Pharmaceuticals
- Xactdose Inc.

Dosage forms

Show 10 entries Search

FORM	ROUTE	STRENGTH
Tablet	Oral	1 g/1
Powder	Not applicable	1 kg/1kg
Suspension	Oral	
Tablet	Oral	

Showing 1 to 5 of 5 entries ‹ 1 ›

Prices

Show 10 entries Search

UNIT DESCRIPTION	COST	UNIT
Sucralfate 1 gm/10ml Suspension 10ml Cup	13.99USD	cup
Carafate 1 gm tablet	1.45USD	tablet
Sucralfate 1 gm tablet	0.72USD	tablet
Sucralfate powder	0.6USD	g
Sulcrate 1 g Tablet	0.59USD	tablet
Apo-Sucralfate 1 g Tablet	0.31USD	tablet
Novo-Sucralate 1 g Tablet	0.31USD	tablet
Nu-Sucralfate 1 g Tablet	0.31USD	tablet
Pms-Sucralfate 1 g Tablet	0.31USD	tablet
Carafate 1 gm/10ml Suspension	0.24USD	ml

Showing 1 to 10 of 11 entries ‹ 1 2 ›

DrugBank does not sell nor buy drugs. Pricing information is supplied for informational purposes only.

Patents

Not Available

PROPERTIES

State

Solid

Experimental Properties

PROPERTY	VALUE	SOURCE
melting point (°C)	>220	https://www.trc-canada.com/product-detail/?S692350
water solubility	Insoluble	https://www.chemicalbook.com/ChemicalProductProperty_US_CB6239042.aspx
logP	-7.087	http://www.molbase.com/en/overview_54182-58-0-moldata-62765.html
pKa	0.43 to 1.19	https://www.chemicalbook.com/ChemicalProductProperty_US_CB6239042.aspx

Predicted Properties

PROPERTY	VALUE	SOURCE
Water Solubility	0.774 mg/mL	ALOGPS
logP	0.74	ALOGPS
logP	-5.9	ChemAxon
logS	-3.3	ALOGPS
pKa (Strongest Acidic)	13.53	ChemAxon
pKa (Strongest Basic)	-3	ChemAxon
Physiological Charge	0	ChemAxon
Hydrogen Acceptor Count	35	ChemAxon
Hydrogen Donor Count	16	ChemAxon
Polar Surface Area	772.17 $Å^2$	ChemAxon
Rotatable Bond Count	37	ChemAxon
Refractivity	180.03 $m^3 \cdot mol^{-1}$	ChemAxon
Polarizability	107.19 $Å^3$	ChemAxon

PROPERTY	VALUE	SOURCE
Number of Rings	2	ChemAxon

Rule of Five	No	ChemAxon
Ghose Filter	No	ChemAxon
Veber's Rule	No	ChemAxon
MDDR-like Rule	No	ChemAxon

Predicted ADMET features

PROPERTY	VALUE	PROBABILITY
Human Intestinal Absorption	-	0.7959
Blood Brain Barrier	+	0.8803
Caco-2 permeable	-	0.6433
P-glycoprotein substrate	Non-substrate	0.8087
P-glycoprotein inhibitor I	Non-inhibitor	0.5656
P-glycoprotein inhibitor II	Non-inhibitor	0.986
Renal organic cation transporter	Non-inhibitor	0.8471
CYP450 2C9 substrate	Non-substrate	0.8611
CYP450 2D6 substrate	Non-substrate	0.8256
CYP450 3A4 substrate	Non-substrate	0.6233
CYP450 1A2 substrate	Non-inhibitor	0.772
CYP450 2C9 inhibitor	Non-inhibitor	0.8211
CYP450 2D6 inhibitor	Non-inhibitor	0.8865
CYP450 2C19 inhibitor	Non-inhibitor	0.7869
CYP450 3A4 inhibitor	Non-inhibitor	0.9828
CYP450 inhibitory promiscuity	Low CYP Inhibitory Promiscuity	0.9328
Ames test	Non AMES toxic	0.5805
Carcinogenicity	Non-carcinogens	0.5356
Biodegradation	Not ready biodegradable	0.8432
Rat acute toxicity	2.4219 LD50, mol/kg	Not applicable
hERG inhibition (predictor I)	Weak inhibitor	0.7937
hERG inhibition (predictor II)	Non-inhibitor	0.8793

ADMET data is predicted using admetSAR, a free tool for evaluating chemical ADMET properties. (23092397)

SPECTRA

Mass Spec (NIST) Not Available

Spectra Not Available

TAXONOMY

Classification Not classified

TARGETS

1. Pepsin A-5 Details

Kind Protein

Organism Humans

Pharmacological action	Yes
Actions	Inhibitor

Drugs

Specific Function	Aspartic-type endopeptidase activity
Gene Name	PGA5
Uniprot ID	P0DJD9
Uniprot Name	Pepsin A-5
Molecular Weight	41992.845 Da

References

1. Jensen SL, Funch Jensen P: Role of sucralfate in peptic disease. Dig Dis. 1992;10(3):153-61. [PubMed:1611711]
2. Hollander D, Tarnawski A: The protective and therapeutic mechanisms of sucralfate. Scand J Gastroenterol Suppl. 1990;173:1-5. [PubMed:2190304]
3. Peterson WL: Pathogenesis and therapy of peptic ulcer disease. J Clin Gastroenterol. 1990;12 Suppl 2:S1-6. [PubMed:1978840]
4. Kegg [Link]

2. Fibroblast growth factor 2

Details

Kind	Protein
Organism	Humans
Pharmacological action	Yes
Actions	Agonist, Inducer
General Function	Ligand-dependent nuclear receptor transcription coactivator activity
Specific Function	Plays an important role in the regulation of cell survival, cell division, angiogenesis, cell differentiation and cell migration. Functions as potent mitogen in vitro.
Gene Name	FGF2
Uniprot ID	P09038
Uniprot Name	Fibroblast growth factor 2
Molecular Weight	30769.715 Da

References

1. Szabo S: The mode of action of sucralfate: the 1 x 1 x 1 mechanism of action. Scand J Gastroenterol Suppl. 1991;185:7-12. [PubMed:1957124]
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4. Korman MG, Bolin TD, Szabo S, Hunt RH, Marks IN, Glise H: Sucralfate: the Bangkok review. J Gastroenterol Hepatol. 1994 Jul-Aug;9(4):412-5. [PubMed:7948825]

3. Pro-epidermal growth factor

Details

Kind	Protein
Organism	Humans
Pharmacological action	Yes
Actions	Inducer
General Function	Transmembrane receptor protein tyrosine kinase activator activity
Specific Function	EGF stimulates the growth of various epidermal and epithelial tissues in vivo and in vitro and of some fibroblasts in cell culture. Magnesiotropic hormone that stimulates magnesium reabsorption in ...

Gene Name	EGF
Uniprot ID	P01133

Molecular Weight	133993.12 Da

References

1. Tarnawski A, Tanoue K, Santos AM, Sarfeh IJ: Cellular and molecular mechanisms of gastric ulcer healing. Is the quality of mucosal scar affected by treatment? Scand J Gastroenterol Suppl. 1995;210:9-14. [PubMed:8578218]
2. Szabo S: The mode of action of sucralfate: the 1 x 1 x 1 mechanism of action. Scand J Gastroenterol Suppl. 1991;185:7-12. [PubMed:1957124]
3. Konturek SJ: Role of growth factors in gastroduodenal protection and healing of peptic ulcers. Gastroenterol Clin North Am. 1990 Mar;19(1):41-65. [PubMed:1970337]

4. Fibrinogen

Kind
Group

Organism
Humans

Pharmacological action
Unknown

Actions
Binder, Protector

This group includes the fibrinogen alpha chain, beta chain, and gamma chain.

References

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