LITERATURE SEARCH PERFORMED ON OCTOBER 21, 2002 BY NANCY MILLER

ChemID database

Name of Substance

- Aloe-emodin

Synonyms

- 1,8-Dihydroxy-3-(hydroxymethyl)-9,10-anthracenedione
- 1,8-Dihydroxy-3-hydroxymethylanthraquinone
- 3-Hydroxymethylchrysazin
- 4-08-00-03578 (Beilstein Handbook Reference)
- Aloe emodin
- Aloe-emodin
- BRN 2059062
- CCRIS 3526
- EINECS 207-571-7
- EMODINE
- NSC 38628
- Rhabarberone

Systematic Name

- 1,8-Dihydroxy-3-(hydroxymethyl)anthraquinone
- 9,10-Anthracenedione, 1,8-dihydroxy-3-(hydroxymethyl)- (9CI)
- Aloe-emodin
- Anthraquinone, 1,8-dihydroxy-3-hydroxymethyl-

Classification Code

- Mutation data

Molecular Formula

- C15-H10-O5

File Locator

- CCRIS
- EINECS
- EMIC
- GENETOX
- RTECS
- TOXLINE

CAS Registry Number

- 481-72-1

RTECS database:
FILE 'RTECS' ENTERED AT 09:15:36 ON 21 OCT 2002
COPYRIGHT (C) 2002 U.S. Secretary of Commerce on Behalf of the U.S. Government (DOC)

Registry of Toxic Effects of Chemical Substances (RTECS). This

National Institute of Occupational Safety and Health (NIOSH) file is a compendium of toxicity data extracted from the scientific literature. File Last Reloaded: FEBRUARY 2001

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS Registry Number (RN): 481-72-1 RTECS
RTECS Number (RTN): CB6712200
Molecular Formula (MF): C15 H10 O5
Formula Weight (FW): 270.25
Chemical Name (CN): Anthraquinone, 1,8-dihydroxy-3-hydroxymethyl-; Aloe-emodin; 9,10-Anthracenedione, 1,8-dihydroxy-3-(hydroxymethyl)- (9CI); 1,8-Dihydroxy-3-(hydroxymethyl)-9,10-anthracenedione; 1,8-Dihydroxy-3-hydroxymethylanthraquinone; 3-Hydroxymethylchrysazin; Rhabarberone
Class Identifier (CI): Mutagen
Wiswesser Notation (WLN): L C666 BV IVJ DQ F1Q NQ
Entry/Update Date (DATE): Dec 1996
Character Count: 2160

MUTATION DATA (MUT):

System SYS	Organism ORGN	Cell Type CELL	Dose DOSE	Source SO
mutation in microorganisms	Salmonella typhimurium		100 ug/plate (+S9)	BCSTB5 5,1489,1977
mutation in microorganisms	Salmonella typhimurium		10 ug/plate (-S9)	MUREAV 367,123,1996
unscheduled DNA synthesis	rat	liver	10 mg/L	MUREAV 240,1,1990
micronucleus test	mouse	lymphocyte	20 umol/L	MUREAV 371,165,1996
mtr	mouse	fibroblast	3 mg/L	MUREAV 240,1,1990
mutation in mammalian somatic cells	mouse	lymphocyte	55500 nmol/L	MUREAV 371,165,1996
cytogenic analysis	hamster	ovary	18750 ug/L	MUREAV 367,123,1996

mutation in mammalian somatic cells	hamster	lung	10 mg/L	MUREAV 240,1,1990

MUTATION DATA REFERENCES:
BCSTB5 Biochemical Society Transactions (Biochemical Soc. Book Depot, POB 32, Commerce Way, Colchester, Essex CO2 8HP, UK) V.1- 1973-
MUREAV Mutation Research (Elsevier Science Pub. B.V., POB 211, 1000 AE Amsterdam, Netherlands) V.1- 1964-

FEDERAL AGENCY STATUS (ASTA):
EPA GENETOX PROGRAM 1988, Weakly Positive: Histidine reversion-Ames te
st

CCRIS database:
The following information was generated from the
Chemical Carcinogenesis Research Information System (CCRIS),
a database of the National Library of Medicine's TOXNET system
(http://toxnet.nlm.nih.gov) on October 21, 2002.

Query: Records containing the term 481 72 1 in the following field:
CAS Registry Number

1

SUBSTANCE IDENTIFICATION:

SUBSTANCE NAME: ALOE-EMODIN

CAS REGISTRY NUMBER: 481-72-1

DATA TYPE: Mutagenicity

STUDIES DATA:

MUTAGENICITY STUDIES:

TEST SYSTEM: UDS RODENT HEPATOCYTES
STRAIN INDICATOR: THY INCORP (NON-S-PHASE)
METABOLIC ACTIVATION: NONE
METHOD: AUTORADIOGRAPHY
DOSE: 6.3-100 UG/ML
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[WESTENDORF,J, MARQUARDT,H, POGINSKY,B, DOMINIAK,M, SCHMIDT,J AND MARQUARDT,H; GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES; MUTAT. RES. 240(1): 1-12, 1990]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: CHINESE HAMSTER V-79
STRAIN INDICATOR: V-79/8-AZAGUANINE
METABOLIC ACTIVATION: NONE
METHOD: STANDARD PLATE
DOSE: 5-30 UG/ML
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[WESTENDORF,J, MARQUARDT,H, POGINSKY,B, DOMINIAK,M, SCHMIDT,J AND MARQUARDT,H; GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES; MUTAT. RES. 240(1): 1-12, 1990]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA1978
METABOLIC ACTIVATION: NONE
METHOD: PREINCUBATION
DOSE: 1-1000 UG/PLATE
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[WESTENDORF,J, MARQUARDT,H, POGINSKY,B, DOMINIAK,M, SCHMIDT,J AND MARQUARDT,H; GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES; MUTAT. RES. 240(1): 1-12, 1990]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA1978
METABOLIC ACTIVATION: RAT, LIVER, S-9
METHOD: PREINCUBATION
DOSE: 1-1000 UG/PLATE
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[WESTENDORF,J, MARQUARDT,H, POGINSKY,B, DOMINIAK,M, SCHMIDT,J AND MARQUARDT,H; GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES; MUTAT. RES. 240(1): 1-12, 1990]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA1538
METABOLIC ACTIVATION: RAT, LIVER, S-9
METHOD: PREINCUBATION
DOSE: 1-1000 UG/PLATE
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[WESTENDORF,J, MARQUARDT,H, POGINSKY,B, DOMINIAK,M, SCHMIDT,J AND MARQUARDT,H; GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES; MUTAT. RES. 240(1): 1-12, 1990]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA1538
METABOLIC ACTIVATION: NONE
METHOD: PREINCUBATION

DOSE: 1-1000 UG/PLATE
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[WESTENDORF,J, MARQUARDT,H, POGINSKY,B, DOMINIAK,M, SCHMIDT,J AND MARQUARDT,H; GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES; MUTAT. RES. 240(1): 1-12, 1990]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA98
METABOLIC ACTIVATION: NONE
METHOD: PREINCUBATION
DOSE: 1-1000 UG/PLATE
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[WESTENDORF,J, MARQUARDT,H, POGINSKY,B, DOMINIAK,M, SCHMIDT,J AND MARQUARDT,H; GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES; MUTAT. RES. 240(1): 1-12, 1990]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA98
METABOLIC ACTIVATION: RAT, LIVER, S-9
METHOD: PREINCUBATION
DOSE: 1-1000 UG/PLATE
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[WESTENDORF,J, MARQUARDT,H, POGINSKY,B, DOMINIAK,M, SCHMIDT,J AND MARQUARDT,H; GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES; MUTAT. RES. 240(1): 1-12, 1990]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA102
METABOLIC ACTIVATION: RAT, LIVER, S-9
METHOD: PREINCUBATION
DOSE: 1-100 UG/PLATE
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[WESTENDORF,J, MARQUARDT,H, POGINSKY,B, DOMINIAK,M, SCHMIDT,J AND MARQUARDT,H; GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES; MUTAT. RES. 240(1): 1-12, 1990]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA1537
METABOLIC ACTIVATION: RAT, LIVER, S-9
METHOD: PREINCUBATION
DOSE: 0.1-100 UG/PLATE
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[WESTENDORF,J, MARQUARDT,H, POGINSKY,B, DOMINIAK,M, SCHMIDT,J AND MARQUARDT,H; GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES; MUTAT.

RES. 240(1): 1-12, 1990]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA1537
METABOLIC ACTIVATION: NONE
METHOD: PREINCUBATION
DOSE: 0.1-100 UG/PLATE
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[WESTENDORF,J, MARQUARDT,H, POGINSKY,B, DOMINIAK,M, SCHMIDT,J AND MARQUARDT,H; GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES; MUTAT. RES. 240(1): 1-12, 1990]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA100
METABOLIC ACTIVATION: NONE
METHOD: STANDARD PLATE
DOSE:
25-500 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[SANDNES,D, JOHANSEN,T, TEIEN,G AND ULSAKER,G; MUTAGENICITY OF CRUDE SENNA AND SENNA GLYCOSIDES IN SALMONELLA TYPHIMURIUM; PHARMACOL. TOXICOL. 71(3):165-172, 1992]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA100
METABOLIC ACTIVATION: RAT, LIVER, S-9, AROCLOR 1254
METHOD: STANDARD PLATE
DOSE:
25-500 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[SANDNES,D, JOHANSEN,T, TEIEN,G AND ULSAKER,G; MUTAGENICITY OF CRUDE SENNA AND SENNA GLYCOSIDES IN SALMONELLA TYPHIMURIUM; PHARMACOL. TOXICOL. 71(3):165-172, 1992]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA102
METABOLIC ACTIVATION: NONE
METHOD: STANDARD PLATE
DOSE:
5-50 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[SANDNES,D, JOHANSEN,T, TEIEN,G AND ULSAKER,G; MUTAGENICITY OF CRUDE SENNA AND SENNA GLYCOSIDES IN SALMONELLA TYPHIMURIUM; PHARMACOL. TOXICOL. 71(3):165-172, 1992]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA97A
METABOLIC ACTIVATION: RAT, LIVER, S-9, AROCLOR 1254
METHOD: STANDARD PLATE
DOSE:
0-100 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[SANDNES,D, JOHANSEN,T, TEIEN,G AND ULSAKER,G; MUTAGENICITY OF CRUDE SENNA AND SENNA GLYCOSIDES IN SALMONELLA TYPHIMURIUM; PHARMACOL. TOXICOL. 71(3):165-172, 1992]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA97A
METABOLIC ACTIVATION: NONE
METHOD: STANDARD PLATE
DOSE:
0-100 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[SANDNES,D, JOHANSEN,T, TEIEN,G AND ULSAKER,G; MUTAGENICITY OF CRUDE SENNA AND SENNA GLYCOSIDES IN SALMONELLA TYPHIMURIUM; PHARMACOL. TOXICOL. 71(3):165-172, 1992]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA98
METABOLIC ACTIVATION: RAT, LIVER, S-9, AROCLOR 1254
METHOD: STANDARD PLATE
DOSE:
0-100 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[SANDNES,D, JOHANSEN,T, TEIEN,G AND ULSAKER,G; MUTAGENICITY OF CRUDE SENNA AND SENNA GLYCOSIDES IN SALMONELLA TYPHIMURIUM; PHARMACOL. TOXICOL. 71(3):165-172, 1992]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA98
METABOLIC ACTIVATION: NONE
METHOD: STANDARD PLATE
DOSE:
0-100 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[SANDNES,D, JOHANSEN,T, TEIEN,G AND ULSAKER,G; MUTAGENICITY OF CRUDE SENNA AND SENNA GLYCOSIDES IN SALMONELLA TYPHIMURIUM; PHARMACOL. TOXICOL. 71(3):165-172, 1992]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA102
METABOLIC ACTIVATION: RAT, LIVER, S-9, AROCLOR 1254
METHOD: STANDARD PLATE
DOSE:
0-50 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[SANDNES,D, JOHANSEN,T, TEIEN,G AND ULSAKER,G; MUTAGENICITY OF CRUDE SENNA AND SENNA GLYCOSIDES IN SALMONELLA TYPHIMURIUM; PHARMACOL. TOXICOL. 71(3):165-172, 1992]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA98
METABOLIC ACTIVATION: NONE
METHOD: PREINCUBATION
DOSE:
300 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[KAWASAKI,Y, GODA,Y AND YOSHIHIRA,K; THE MUTAGENIC CONSTITUENTS OF RUBIA TINCTORUM; CHEM. PHARM. BULL. 40(6):1504-1509, 1992]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA98
METABOLIC ACTIVATION: RAT, LIVER, S-9, PCB
METHOD: PREINCUBATION
DOSE:
300 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[KAWASAKI,Y, GODA,Y AND YOSHIHIRA,K; THE MUTAGENIC CONSTITUENTS OF RUBIA TINCTORUM; CHEM. PHARM. BULL. 40(6):1504-1509, 1992]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA100
METABOLIC ACTIVATION: NONE
METHOD: PREINCUBATION
DOSE:
300 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[KAWASAKI,Y, GODA,Y AND YOSHIHIRA,K; THE MUTAGENIC CONSTITUENTS OF RUBIA TINCTORUM; CHEM. PHARM. BULL. 40(6):1504-1509, 1992]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA100
METABOLIC ACTIVATION: RAT, LIVER, S-9, PCB

METHOD: PREINCUBATION
DOSE:
300 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[KAWASAKI,Y, GODA,Y AND YOSHIHIRA,K; THE MUTAGENIC CONSTITUENTS OF RUBIA TINCTORUM; CHEM. PHARM. BULL. 40(6):1504-1509, 1992]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA1537
METABOLIC ACTIVATION: NONE
METHOD: STANDARD PLATE
DOSE: 0-5000 UG/PLATE
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, MILTENBURGER,HG AND MENGS,U; THE GENOTOXICITY STATUS OF SENNA; PHARMACOLOGY 47(S1):178-186, 1993]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA1538
METABOLIC ACTIVATION: NONE
METHOD: STANDARD PLATE
DOSE: 0-5000 UG/PLATE
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, MILTENBURGER,HG AND MENGS,U; THE GENOTOXICITY STATUS OF SENNA; PHARMACOLOGY 47(S1):178-186, 1993]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA98
METABOLIC ACTIVATION: NONE
METHOD: STANDARD PLATE
DOSE: 0-5000 UG/PLATE
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, MILTENBURGER,HG AND MENGS,U; THE GENOTOXICITY STATUS OF SENNA; PHARMACOLOGY 47(S1):178-186, 1993]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA1538
METABOLIC ACTIVATION: RAT, LIVER, S-9, AROCLOR 1254
METHOD: STANDARD PLATE
DOSE: 0-5000 UG/PLATE
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, MILTENBURGER,HG AND MENGS,U; THE GENOTOXICITY STATUS OF SENNA; PHARMACOLOGY 47(S1):178-186, 1993]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: CHINESE HAMSTER V-79
STRAIN INDICATOR: V-79 (HGPRT)/6-THIOGUANINE
METABOLIC ACTIVATION: NONE
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, MILTENBURGER,HG AND MENGS,U; THE GENOTOXICITY STATUS OF SENNA; PHARMACOLOGY 47(S1):178-186, 1993]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: UDS RAT HEPATOCYTES
STRAIN INDICATOR: THY INCORP
METABOLIC ACTIVATION: NONE
METHOD: AUTORADIOGRAPHY
DOSE: 0-1000 MG/KG
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, MILTENBURGER,HG AND MENGS,U; THE GENOTOXICITY STATUS OF SENNA; PHARMACOLOGY 47(S1):178-186, 1993]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: UDS RAT HEPATOCYTES
STRAIN INDICATOR: THY INCORP
METABOLIC ACTIVATION: NONE
METHOD: IN VIVO-IN VITRO
DOSE: 100; 1000 MG/KG SUSPENDED IN TRAGANTH
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, VOELKNER,W AND MENGS,U; GENOTOXICITY OF ALOEEMODIN IN VITRO AND IN VIVO; MUTAT. RES. 367(3):123-133, 1996]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: CHINESE HAMSTER V-79
STRAIN INDICATOR: V-79 (HPRT)/6-THIOGUANINE
METABOLIC ACTIVATION: RAT, LIVER, S-9, AROCLOR 1254
DOSE:
5-350 UG/ML (TEST MATERIAL SOLVENT: DMSO)
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, VOELKNER,W AND MENGS,U; GENOTOXICITY OF ALOEEMODIN IN VITRO AND IN VIVO; MUTAT. RES. 367(3):123-133, 1996]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: CHINESE HAMSTER V-79
STRAIN INDICATOR: V-79 (HPRT)/6-THIOGUANINE
METABOLIC ACTIVATION: NONE
DOSE:
5-350 UG/ML (TEST MATERIAL SOLVENT: DMSO)
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, VOELKNER,W AND MENGS,U; GENOTOXICITY OF ALOEEMODIN IN VITRO AND IN VIVO; MUTAT. RES. 367(3):123-133, 1996]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA1538
METABOLIC ACTIVATION: RAT, LIVER, S-9, AROCLOR 1254
METHOD: STANDARD PLATE
DOSE:
10-5000 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, VOELKNER,W AND MENGS,U; GENOTOXICITY OF ALOEEMODIN IN VITRO AND IN VIVO; MUTAT. RES. 367(3):123-133, 1996]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA1538
METABOLIC ACTIVATION: NONE
METHOD: STANDARD PLATE
DOSE:
10-5000 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, VOELKNER,W AND MENGS,U; GENOTOXICITY OF ALOEEMODIN IN VITRO AND IN VIVO; MUTAT. RES. 367(3):123-133, 1996]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA1537
METABOLIC ACTIVATION: NONE
METHOD: STANDARD PLATE
DOSE:
0.03-5000 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, VOELKNER,W AND MENGS,U; GENOTOXICITY OF ALOEEMODIN IN VITRO AND IN VIVO; MUTAT. RES. 367(3):123-133, 1996]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA1535
METABOLIC ACTIVATION: RAT, LIVER, S-9, AROCLOR 1254
METHOD: STANDARD PLATE
DOSE:
10-5000 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, VOELKNER,W AND MENGS,U; GENOTOXICITY OF ALOEEMODIN IN VITRO AND IN VIVO; MUTAT. RES. 367(3):123-133, 1996]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA1535
METABOLIC ACTIVATION: NONE

METHOD: STANDARD PLATE
DOSE:
10-5000 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, VOELKNER,W AND MENGS,U; GENOTOXICITY OF ALOEEMODIN IN VITRO AND IN VIVO; MUTAT. RES. 367(3):123-133, 1996]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA100
METABOLIC ACTIVATION: RAT, LIVER, S-9, AROCLOR 1254
METHOD: STANDARD PLATE
DOSE:
10-5000 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, VOELKNER,W AND MENGS,U; GENOTOXICITY OF ALOEEMODIN IN VITRO AND IN VIVO; MUTAT. RES. 367(3):123-133, 1996]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA100
METABOLIC ACTIVATION: NONE
METHOD: STANDARD PLATE
DOSE:
10-5000 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: NEGATIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, VOELKNER,W AND MENGS,U; GENOTOXICITY OF ALOEEMODIN IN VITRO AND IN VIVO; MUTAT. RES. 367(3):123-133, 1996]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA98
METABOLIC ACTIVATION: NONE
METHOD: STANDARD PLATE
DOSE:
10-5000 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: POSITIVE
REFERENCE:
<NOINDEX>[HEIDEMANN,A, VOELKNER,W AND MENGS,U; GENOTOXICITY OF ALOEEMODIN IN VITRO AND IN VIVO; MUTAT. RES. 367(3):123-133, 1996]</NOINDEX>

MUTAGENICITY STUDIES:

TEST SYSTEM: AMES SALMONELLA TYPHIMURIUM
STRAIN INDICATOR: TA98
METABOLIC ACTIVATION: RAT, LIVER, S-9, AROCLOR 1254
METHOD: STANDARD PLATE
DOSE:
10-5000 UG/PLATE (TEST MATERIAL SOLVENT: DMSO)
RESULTS: NEGATIVE
REFERENCE:

<NOINDEX>[HEIDEMANN,A, VOELKNER,W AND MENGS,U; GENOTOXICITY OF ALOEEMODIN IN VITRO AND IN VIVO; MUTAT. RES. 367(3):123-133, 1996]</NOINDEX>

ADMINISTRATIVE INFORMATION:

CCRIS RECORD NUMBER: 3526

LAST REVISION DATE: 19980211

UPDATE HISTORY:
Complete Update on 02/11/1998, 1 field added/edited/deleted.
Complete Update on 03/04/1996, 4 fields added/edited/deleted.
Complete Update on 04/07/1995, 3 fields added/edited/deleted.
Complete Update on 11/05/1993, 4 fields added/edited/deleted.
Complete Update on 06/05/1992, 6 fields added/edited/deleted.

EMIC database:
The following information was generated from the
Toxicology Literature Online Databank (TOXLINE),
a database of the National Library of Medicine's TOXNET system
(http://toxnet.nlm.nih.gov) on October 21, 2002.

Query: CAS Registry Number:
481-72-1
The word EMIC in the Database field.

Mutagenicity of crude senna and senna glycosides in Salmonella typhimurium.
Sandnes D; Johansen T; Teien G; Ulsaker G
Pharmacol Toxicol 1992 Sep;71(3 Pt 1):165-72

The genotoxicity status of senna.
Heidemann A; Miltenburger HG; Mengs U
Pharmacology 1993 Oct;47 Suppl 1:178-86

[Pharmakologische und toxikologische bewertung von anthranoiden.]
Westendorf J
PHARM ZTG 1993 Dec 2;138(48):9-20 [German]

Genotoxicity of aloeemodin in vitro and in vivo.
Heidemann A; VÓolkner W; Mengs U
Mutat Res 1996 Mar 1;367(3):123-33

Assessment of the genotoxic risk from laxative senna products.
Brusick D; Mengs U
Environ Mol Mutagen 1997;29(1):1-9

DNA damage and repair in mammalian cells in vitro and in vivo as indicators of exposure to carcinogens.
McGregor D; Anderson D
IARC Sci Publ 1999(146):309-54

FRAMESHIFT MUTAGENICITY OF CERTAIN NATURALLY OCCURRING PHENOLIC COMPOUNDS IN THE SALMONELLA/MICROSOME TEST: ACTIVATION OF ANTHRAQUINONE AND FLAVONOL GLYCOSIDES BY GUT BACTERIAL ENZYMES
BROWN JP; DIETRICH PS; BROWN RJ
BIOCHEM SOC TRANS 5:1489-1492,1977

MUTAGENICITY OF ANTHRAQUINONE AND BENZANTHRONE DERIVATIVES IN THE SALMONELLA/MICROSOME TEST: ACTIVATION OF ANTHRAQUINONE GLYCOSIDES BY ENZYMIC EXTRACTS OF RAT CECAL BACTERIA
BROWN JP; DIETRICH PS
MUTAT RES 66:9-24,1979

EFFECT OF EMODIN ON THE MUTAGENICITY OF 3-AMINO-1-METHYL-5H-PYRIDO(4,3-B)INDOL TOWARD SALMONELLA
KUSHI A; KOIWAI A; YOSHIDA D; GOTO F
AGRIC BIOL CHEM 44:2513-2515,1980

GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES
WESTENDORF J; MARQUARDT H; POGINSKY B; DOMINIAK M; SCHMIDT J; MARQUARDT H
MUTAT RES 240:1-12,1990

The mutagenic constituents of Rubia tinctorum.
Kawasaki Y; Goda Y; Yoshihira K
Chem Pharm Bull (Tokyo) 1992 Jun;40(6):1504-9

Geenetox database:
The following information was generated from the
Genetic Toxicology Databank (GENETOX),
a database of the National Library of Medicine's TOXNET system
(http://toxnet.nlm.nih.gov) on October 21, 2002.

Query: Records containing the term 481 72 1 in the following field:
CAS Registry Number

1

SUBSTANCE IDENTIFICATION:

SUBSTANCE NAME:
1,8-DIHYDROXY-3-HYDROXYMETHYLANTHRAQUINONE

CAS REGISTRY NUMBER: 481-72-1

CHEMICAL CLASSIFICATION CATEGORY: Anthraquinones, quinones

TAXONOMIC NAME & ASSAY: Prokaryotes - gene mutation

MUTAGENICITY STUDIES:

GENE-TOX EVALUATION A (PRE-1980):

SPECIES/CELL TYPE:
Salmonella typhimurium (one or more of the five standard strains: TA98, TA100, TA1535, TA1537, and TA1538)
ASSAY TYPE:
Histidine reverse gene mutation, Ames assay
ASSAY CODE: SAL+/-*
RESULTS:
Positive without activation, negative with activation
ACTIVATION: With metabolic activation
PANEL REPORT:
EMICBACK/63689; MUTAT RES 168:69-240,1986
REFERENCE: EMICBACK/30874; MUTAT RES 66:9-24,1979

ADMINISTRATIVE INFORMATION:

GENETOX RECORD NUMBER:
1491

LAST REVISION DATE:
19950406

UPDATE HISTORY:
Field Update on 04/06/1995, 1 field added/edited/deleted.

Complete update on 01/30/1991, 4 fields added/edited/deleted.

Toxline database:
The following information was generated from the
Toxicology Literature Online Databank (TOXLINE),
a database of the National Library of Medicine's TOXNET system
(http://toxnet.nlm.nih.gov) on October 21, 2002.

Query: The chemical name rhabarberone was identified.
The following terms were added from ChemIDplus:
rhabarberone
emodine
aloe emodin
CAS Registry Number: 481-72-1

The genotoxicity status of senna.
Heidemann A; Miltenburger HG; Mengs U
Pharmacology 1993 Oct;47 Suppl 1:178-86 [EMIC]

Anthraquinone drugs. II. Inadvertent acetylation of aloe-emodin during preparation of aglycones from crude drugs--UV, IR, and NMR spectra of the products
Gyanchandani ND; Nigam IC
J. Pharm. Sci.; VOL 58 ISS Jul 1969, P833-835, (REF 14) [IPA]

Isolation of a new aloe-emodin dianthrone diglucoside from senna and its potentiating effect on the purgative activity of sennoside A in mice

Nakajima K; Yamauchi K; Kuwano S
J. Pharm. Pharmacol.; VOL 37 ISS Oct 1985, P703-706, (REF 10) [IPA]

Genotoxicity of the laxative drug components emodin, aloe-emodin and danthron in mammalian cells: topoisomerase II mediated?
MÓuller SO; Eckert I; Lutz WK; Stopper H
Mutat Res 1996 Dec 20;371(3-4):165-73 [EMIC]

Tumor inhibitors. 114. Aloe emodin: antileukemic principle isolated from Rhamnus frangula
Kupchan SM; Karim A
Lloydia; VOL 39 ISS Jul-Aug 1976, P223-224, (REF 5) [IPA]

Determination of rhein, emodin, chrysophanol, physcion and aloe-emodin in Jinyiniaoshi granules and radix Rhei by HPLC
Cao H; Liu Y
Chin. J. Pharm. Anal. (Yaowu Fenxi Zazhi); VOL 18 ISS Jan 1998, P3-6, (REF 4) [Chinese] [IPA]

Densitometric method for the assay of contents of aloeemodin glycosides in Senna pods and leaves and in the aqueous preparations
Miething H; Boventer W; Hansel R
Pharm. Ztg.; VOL 131 ISS Mar 27 1986, P747-749, (REF 7) [German] [IPA]

Cassia grandis L., new source of aloe-emodin
Gritsanapan W; Jirawongse V; Tantisewie B
Mahidol Univ. J. Pharm. Sci. (Varasarn Paesachasarthara); VOL 10 ISS Jan-Mar 1983, P6-8, (REF 17) [IPA]

Phytochemical study of Cassia didymobotrya Fres. cultivated in Egypt. Part 1. Study of quinones and uracil
El-Sayyad SM; Abdel-Baky AM; Backheet EY; Glombitza KW
Bull. Pharm. Sci. Assiut Univ.; VOL 11 ISS 2 1988, P165-175, (REF) [IPA]

Presence of anthracenic compounds in leaves of Cassia fastuosa Willd
Krambeck R; Moreira EA; Leonard R; Miguel OQ
Rev. Bras. Farmacogn.; VOL 2-4 ISS 1 1987, P1-12, (REF 28) [Portuguese] [IPA]

Assessment of the genotoxic risk from laxative senna products.
Brusick D; Mengs U
Environ Mol Mutagen 1997;29(1):1-9 [EMIC]

SOS induction of selected naturally occurring substances in Escherichia coli (SOS chromotest).
Kevekordes S; Mersch-Sundermann V; Burghaus CM; Spielberger J; Schmeiser HH; Arlt VM; Dunkelberg H
Mutat Res 1999 Sep 15;445(1):81-91 [EMIC]

Biotransformation of the anthraquinones emodin and chrysophanol by cytochrome P450 enzymes. Bioactivation to genotoxic metabolites.
Mueller SO; Stopper H; Dekant W
Drug Metab Dispos 1998 Jun;26(6):540-6 [EMIC]

Anthraquinones and anthraquinone glucosides in Chinese rhubarb roots
Bellaart AC
Pharm. Weekbl.; VOL 106 ISS Mar 19 1971, P252-262, (REF 54) [Dutch] [IPA]

Phytochemical investigation of Cassia absus (roots and leaves)
Rao RVK; Rao JVLNS; Vimaladevi M
Lloydia; VOL 42 ISS May-Jun 1979, P299-300, (REF 5) [IPA]

Genotoxicity of naturally occurring hydroxyanthraquinones.
WESTENDORF J; MARQUARDT H; POGINSKY B; DOMINIAK M; SCHMIDT J; MARQUARDT H
MUTAT RES; 240 (1). 1990. 1-12. [BIOSIS]

Anthraquinones from pods of Cassia sieberiana
Rai PP
Med. Pharm. Marketing; VOL 7 ISS Jan-Feb 1980, P97, (REF 6) [IPA]

Characterization of the genotoxicity of anthraquinones in mammalian cells.
Mueller SO; Stopper H
Biochim Biophys Acta 1999 Aug 5;1428(2-3):406-14 [EMIC]

Relative purgative activities of 1,8-dihydroxyanthracene derivatives
Fairbairn JW; Moss MJR
J. Pharm. Pharmacol.; VOL 22 ISS Aug 1970, P584-593, (REF 24) [IPA]

Ketimines from hydroxyanthraquinones
Auterhoff H; Gedeon S
Arch. Pharm. (Weinham); VOL 304 ISS Apr 1971, P241-247, (REF 5) [German] [IPA]

TOXICITY OF CASSIA SICKLEPOD PHYTOTOXINS SENNOSIDES AND RELATED CHEMICALS ALOIN ALOE EMODIN CHRYSAROBIN CHRYSOPHANOL DANTHRON EMODIN FRANGULIN A PHYSCION SENNIDINS AND N METHYLMORPHOLINE ON THE PROTOZOAN TETRAHYMENA-PYRIFORMIS
NISHIE K; PORTER JK; TATE LK
74TH ANNUAL MEETING OF THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY, PART I, WASHINGTON, D.C., USA, APRIL 1-5, 1990. FASEB (FED AM SOC EXP BIOL) J; 4 (3). 1990. A751. [BIOSIS]

[Pharmakologische und toxikologische bewertung von anthranoiden.]
Westendorf J
PHARM ZTG 1993 Dec 2;138(48):9-20 [German] [EMIC]

Investigation of the anthracene derivatives in Rumex hydrolapathum Huds. Part I
Labadie RP; Scheffer JJ; Baerheim Svendsen A
Pharm. Weekbl.; VOL 107 ISS Aug 25 1972, P535-539, (REF 7) [IPA]

The mutagenic constituents of Rubia tinctorum.
KAWASAKI Y; GODA Y; YOSHIHIRA K
CHEM PHARM BULL (TOKYO); 40 (6). 1992. 1504-1509. [BIOSIS]

SOS induction of selected naturally occurring substances in Escherichia coli (SOS chromotest).
KEVEKORDES S; MERSCH-SUNDERMANN V; BURGHAUS CM; SPIELBERGER J; SCHMEISER HH; ARLT VM; DUNKELBERG H
MUTATION RESEARCH; 445 (1). 1999. 81-91. [BIOSIS]

Improvements of the assay of aloin
Auterhoff H; Widmaier W
Dtsch. Apoth. Ztg.; VOL 115 ISS Sep 25 1975, P1449-1450, (REF 10) [German] [IPA]

Separation of anthraquinones contained in Rabarbaro (Rheum palmatum) using liquid-liquid chromatography
Castagnola V; Penninari G; De Vries GA

Boll. Chim. Farm.; VOL 115 ISS May 1976, P376-382, (REF 13) [Italian] [IPA]

Anthraquinones in Rheum palmatum and Rumex dentatus (Polygonaceae), and phorbol esters in Jatropha curcas (Euphorbiaceae) with molluscicidal activity against the schistosome vector snails Oncomelania, Biomphalaria and Bulinus.
LIU SY; SPORER F; WINK M; JOURDANE J; HENNING R; LI YL; RUPPEL A
TROPICAL MEDICINE & INTERNATIONAL HEALTH; 2 (2). 1997. 179-188. [BIOSIS]

Chemical investigation of Cassia alata L. (Fam. Leguminosae)
Villaroya MLE; Bernal-Santos R
Asian J. Pharm.; VOL 3 ISS Oct 1975, P10-12, 17-24, (REF 13) [IPA]

Assessment of the genotoxic risk from laxative senna products.
BRUSICK D; MENGS U
ENVIRONMENTAL AND MOLECULAR MUTAGENESIS; 29 (1). 1997. 1-9. [BIOSIS]

Characterization of the genotoxicity of anthraquinones in mammalian cells.
MUELLER SO; STOPPER H
BIOCHIMICA ET BIOPHYSICA ACTA; 1428 (2-3). 1999. 406-414. [BIOSIS]

Mutagenicity of anthraquinone and benzanthrone derivatives in the Salmonella/microsome test: Activation of anthraquinone glycosides by enzymic extracts of rat cecal bacteria.
BROWN JP; DIETRICH PS
MUTAT RES; 66 (1). 1979. 9-24. [HEEP]

The mutagenic constituents of Rubia tinctorum.
Kawasaki Y; Goda Y; Yoshihira K
Chem Pharm Bull (Tokyo) 1992 Jun;40(6):1504-9 [EMIC]

Mutagenicity of crude senna and senna glycosides in Salmonella typhimurium.
Sandnes D; Johansen T; Teien G; Ulsaker G
Pharmacol Toxicol 1992 Sep;71(3 Pt 1):165-72 [EMIC]

EFFECT OF EMODIN ON THE MUTAGENICITY OF 3-AMINO-1-METHYL-5H-PYRIDO(4,3-B)INDOL TOWARD SALMONELLA
KUSHI A; KOIWAI A; YOSHIDA D; GOTO F
AGRIC BIOL CHEM 44:2513-2515,1980 [EMIC]

GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES
WESTENDORF J; MARQUARDT H; POGINSKY B; DOMINIAK M; SCHMIDT J; MARQUARDT H
MUTAT RES 240:1-12,1990 [EMIC]

Genotoxicity of aloeemodin in vitro and in vivo.
Heidemann A; VÓolkner W; Mengs U
Mutat Res 1996 Mar 1;367(3):123-33 [EMIC]

Use of the Miniscreen assay to screen novel compounds for bacterial mutagenicity in the pharmaceutical industry.
Burke DA; Wedd DJ; Burlinson B
Mutagenesis 1996 Mar;11(2):201-5 [EMIC]

Cytotoxicity of a low molecular weight fraction from Aloe vera (Aloe barbadensis Miller) gel.
AVILA H; RIVERO J; HERRERA F; FRAILE G
TOXICON; 35 (9). 1997. 1423-1430. [BIOSIS]

STRUCTURE-ACTIVITY RELATIONSHIP OF THE GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES
WESTENDORF J; MARGUARDT H
29TH SPRING MEETING OF THE DEUTSCHE GESELLSCHAFT FUER PHARMAKOLOGIE UND TOXIKOLOGIE (GERMAN SOCIETY FOR PHARMACOLOGY AND TOXICOLOGY), MAINZ, WEST GERMANY, MARCH 8-11, 1988. NAUNYN-SCHMIEDEBERG'S ARCH PHARMACOL; 337 (SUPPL.). 1988. R33. [BIOSIS]

Purification, glucose-6-phosphate inhibition and HPLC analysis of four 1,8-dihydroxyanthrones
Rychener M; Steiger W
Pharm. Acta Helv.; VOL 64 ISS 1 1989, P8-15, (REF 29) [German] [IPA]

DNA damage and repair in mammalian cells in vitro and in vivo as indicators of exposure to carcinogens.
McGregor D; Anderson D
IARC Sci Publ 1999(146):309-54 [EMIC]

Comparative investigation of methods used to estimate aloin and related compounds in aloe
McCarthy TJ; Mapp RK
Planta Med.; VOL 18 ISS Jan 1970, P36-43, (REF 22) [IPA]

Determination of rhein, aloe-emodin and emodin contained in Rheum officinale and its Chinese patent medicines by RP-HPLC
Zhao LH; Lin SL; Wang YM; Dong SS
J. China Pharm. Univ. (Zhongguo Yaoke Daxue Xuebao); VOL 19 ISS Dec 1988, P266-268, (REF 4) [Chinese] [IPA]

CYTOGENETIC EFFECT OF THREE MONOTERPENES, AN ANTHRAQUINONE AND ATROPOLONE ON MITOSIS IN VICIA FABA
SCHMID E
GENETICA(THE HAGUE) 40:65-83,1969 [German] [EMIC]

FRAMESHIFT MUTAGENICITY OF CERTAIN NATURALLY OCCURRING PHENOLIC COMPOUNDS IN THE SALMONELLA/MICROSOME TEST: ACTIVATION OF ANTHRAQUINONE AND FLAVONOL GLYCOSIDES BY GUT BACTERIAL ENZYMES
BROWN JP; DIETRICH PS; BROWN RJ
BIOCHEM SOC TRANS 5:1489-1492,1977 [EMIC]

MUTAGENICITY OF ANTHRAQUINONE AND BENZANTHRONE DERIVATIVES IN THE SALMONELLA/MICROSOME TEST: ACTIVATION OF ANTHRAQUINONE GLYCOSIDES BY ENZYMIC EXTRACTS OF RAT CECAL BACTERIA
BROWN JP; DIETRICH PS
MUTAT RES 66:9-24,1979 [EMIC]

Chromones in Aloe species. I. Aloesin, a C-glucosyl-7-hydroxychromone
Holdsworth DK
Planta Med.; VOL 19 ISS Apr 1971, P322-325, (REF 14) [IPA]

Inhibition of Benzo(a)pyrene Metabolism in Rat Liver Microsomes by the Chinese Naturally Occurring Quinones
Wang ZY; Wu Y; Zhou ZC; Yan LS; Wang FL
Polynuclear Aromatic Hydrocarbons: Mechanisms, Methods and Metabolism, Proceedings of the Eighth International Symposium, M. Cooke and A. J. Dennis, Editors; Columbus, Ohio, Battelle Press, pages 1385-1394, 16 references, 19851985 [NIOSH]

Specific reaction of aloe extract with serum proteins of various animals.
Fujita K; Suzuki I; Ochiai J; Shinpo K; Inoue S; Saito H
Experientia, Vol. 34, p. 523-524, 1978 [PPBIB]

Medline database:

Toxcenter database:

```
FILE 'TOXCENTER' ENTERED AT 09:11:32 ON 21 OCT 2002
COPYRIGHT (C) 2002 ACS


FILE COVERS 1907 TO 15 Oct 2002 (20021015/ED)

This file contains CAS Registry Numbers for easy and accurate substance
identification.

The MEDLINE file segment has been reloaded.  See HELP RLOAD for details.

Thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2002
vocabulary.  Enter HELP THESAURUS for details.

=> s 481-72-1  or Aloe()emodin
            90 481-72-1
           483 ALOE
           450 EMODIN
           115 ALOE(W)EMODIN
L1         130 481-72-1  OR ALOE(W)EMODIN

=> S ames or carcinogen? or chromosomal or clastogen? or genotoxic? or metabolism
or micronuclei or mutagen? or reproductive or subchronic or teratogen? or acute or
subchronic
         11616 AMES
        224716 CARCINOGEN?
         27908 CHROMOSOMAL
          6852 CLASTOGEN?
         31017 GENOTOXIC?
        564945 METABOLISM
          7972 MICRONUCLEI
        211447 MUTAGEN?
         50737 REPRODUCTIVE
          6431 SUBCHRONIC
         37688 TERATOGEN?
        246330 ACUTE
          6431 SUBCHRONIC
L2     1179138 AMES OR CARCINOGEN? OR CHROMOSOMAL OR CLASTOGEN? OR GENOTOXIC?
               OR METABOLISM OR MICRONUCLEI OR MUTAGEN? OR REPRODUCTIVE OR
               SUBCHRONIC OR TERATOGEN? OR ACUTE OR SUBCHRONIC
```

```
=> s neurotoxi? or immunotoxi? or epidemiolog? or mechanisms or chronic or subacute
or acute or pharmacokinetic? or pharmacodynamic? or developmental or (sub(w)acute)
or (sub(w)chronic)
         69678 NEUROTOXI?
          9402 IMMUNOTOXI?
        130542 EPIDEMIOLOG?
        164881 MECHANISMS
        200261 CHRONIC
         10506 SUBACUTE
        246330 ACUTE
        104946 PHARMACOKINETIC?
         39664 PHARMACODYNAMIC?
         29266 DEVELOPMENTAL
         17057 SUB
        246330 ACUTE
           493 SUB(W)ACUTE
         17057 SUB
        200261 CHRONIC
           300 SUB(W)CHRONIC
L3      863254 NEUROTOXI? OR IMMUNOTOXI? OR EPIDEMIOLOG? OR MECHANISMS OR CHRON
               IC OR SUBACUTE OR ACUTE OR PHARMACOKINETIC? OR PHARMACODYNAMIC?
               OR DEVELOPMENTAL OR (SUB(W)ACUTE) OR (SUB(W)CHRONIC)

=> s l1 and (l2 or l3)
L4          62 L1 AND (L2 OR L3)

=> d ti 1-62

L4   ANSWER 1 OF 62  TOXCENTER COPYRIGHT 2002 ACS

TI   The antiproliferative activity of aloe-emodin is through p53-dependent
     and p21-dependent apoptotic pathway in human hepatoma cell lines

L4   ANSWER 2 OF 62  TOXCENTER COPYRIGHT 2002 ACS

TI   Studies on the photostability and phototoxicity of aloe-emodin, emodin
     and rhein

L4   ANSWER 3 OF 62  TOXCENTER COPYRIGHT 2002 ACS

TI   Cytotoxicity of rhein, the active metabolite of sennoside laxatives, is
     reduced by multidrug resistance-associated protein I

L4   ANSWER 4 OF 62  TOXCENTER COPYRIGHT 2002 ACS

TI   Photochemistry and phototoxicity of aloe emodin

L4   ANSWER 5 OF 62  TOXCENTER COPYRIGHT 2002 ACS

TI   Cytotoxicity of rhein, the active metabolite of sennoside laxatives, is
     reduced by multidrug resistance-associated protein 1

L4   ANSWER 6 OF 62  TOXCENTER COPYRIGHT 2002 ACS

TI   Effects and mechanisms of aloe-emodin on cell death in human lung
     squamous cell carcinoma
```

L4 ANSWER 7 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Aloe-Emodin quinone pretreatment reduces acute liver injury induced by carbon tetrachloride

L4 ANSWER 8 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Aloe-emodin quinone pretreatment reduces acute liver injury induced by carbon tetrachloride

L4 ANSWER 9 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Induction of primary cutaneous melanomas in C3H mice by combined treatment with ultraviolet radiation, ethanol and aloe emodin

L4 ANSWER 10 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Anthranoid contents of rhubarb (Rheum undulatum L.) and other Rheum species and their toxicological relevance

L4 ANSWER 11 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Induction of primary cutaneous melanomas in C3H mice by combined treatment with ultraviolet radiation, ethanol and aloe emodin

L4 ANSWER 12 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI No clastogenic activity of a senna extract in the mouse micronucleus assay

L4 ANSWER 13 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Characterization of the genotoxicity of anthraquinones in mammalian cells

L4 ANSWER 14 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Characterization of the genotoxicity of anthraquinones in mammalian cells

L4 ANSWER 15 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Characterization of the genotoxicity of anthraquinones in mammalian cells

L4 ANSWER 16 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Effect of anthraquinone-laxatives on the proliferation and urokinase secretion of normal, premalignant and malignant colonic epithelial cells

L4 ANSWER 17 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI The inhibition by naphthoquinones and anthraquinones of 2-amino-3-methylimidazo[4,5-b]quinoline metabolic activation to a mutagen. A structure-activity relationship study

L4 ANSWER 18 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Effect of anthraquinone-laxatives on the proliferation and urokinase secretion of normal, premalignant and malignant colonic epithelial cells

L4 ANSWER 19 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Biotransformation of the anthraquinones emodin and chrysophanol by cytochrome P450 enzymes. Bioactivation to genotoxic metabolites

L4 ANSWER 20 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Effect of anthraquinone-laxatives on the proliferation and urokinase secretion of normal, premalignant and malignant colonic epithelial cells

L4 ANSWER 21 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Biotransformation of the anthraquinones emodin and chrysophanol by cytochrome P450 enzymes. Bioactivation to genotoxic metabolites

L4 ANSWER 22 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Assessment of the genotoxic risk from laxative senna products

L4 ANSWER 23 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Assessment of the genotoxic risk from laxative senna products

L4 ANSWER 24 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Genotoxicity of the laxative drug components emodin, aloe-emodin and danthron in mammalian cells: Topoisomerase II mediated

L4 ANSWER 25 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Assessment of the genotoxic risk from laxative senna products

L4 ANSWER 26 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Genotoxicity of the laxative drug components emodin, aloe-emodin and danthron in mammalian cells: topoisomerase II mediated?

L4 ANSWER 27 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Acceleration of the alcohol oxidation rate in rats with aloin, a quinone derivative of Aloe

L4 ANSWER 28 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Genotoxicity of the laxative drug components emodin, aloe-emodin and danthron in mammalian cells: Topoisomerase II mediated?

L4 ANSWER 29 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Acceleration of the alcohol oxidation rate in rats with aloin, a quinone derivative of Aloe

L4 ANSWER 30 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Antimutagenicity of anthraquinones

L4 ANSWER 31 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Studies on the effect of Aloe spp. on ethanol metabolism. 3. Isolation of ethanol metabolizing enzyme inhibitors from Aloe spp

L4 ANSWER 32 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Genotoxicity of aloeemodin in vitro and in vivo

L4 ANSWER 33 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Genotoxicity of aloeemodin in vitro and in vivo

L4 ANSWER 34 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI A purgative action of barbaloin is induced by Eubacterium sp. strain BAR, a human intestinal anaerobe, capable of transforming barbaloin to aloe-emodin anthrone

L4 ANSWER 35 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Mutagen inhibitors containing Aloe extracts

L4 ANSWER 36 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI A process for the preparation of diacerein.

L4 ANSWER 37 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Analytics of senna drugs with regard to the toxicological discussion of anthranoids

L4 ANSWER 38 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Two-year carcinogenicity study with sennosides in the rat: Emphasis on gastrointestinal alterations

L4 ANSWER 39 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI The genotoxicity status of senna

L4 ANSWER 40 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Analytics of senna drugs with regard to the toxicological discussion of anthranoids

L4 ANSWER 41 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI The genotoxicity status of senna

L4 ANSWER 42 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Analytics of senna drugs with regard to the toxicological discussion of anthranoids

L4 ANSWER 43 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI The genotoxicity status of senna

L4 ANSWER 44 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI The mutagenic constituents of Rubia tinctorum

L4 ANSWER 45 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Metabolic activation of sennoside C in mice: synergistic action of anthrones

L4 ANSWER 46 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Mutagenicity of crude senna and senna glycosides in Salmonella typhimurium

L4 ANSWER 47 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI HYDROXYANTHRAQUINONES AS TUMOR PROMOTERS ENHANCEMENT OF MALIGNANT TRANSFORMATION OF C3H MOUSE FIBROBLASTS AND GROWTH STIMULATION OF PRIMARY RAT HEPATOCYTES

L4 ANSWER 48 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Hydroxyanthraquinones as tumor promoters: enhancement of malignant transformation of C3H mouse fibroblasts and growth stimulation of primary rat hepatocytes

L4 ANSWER 49 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Hydroxyanthraquinones as tumor promoters: enhancement of malignant transformation of C3H mouse fibroblasts and growth stimulation of primary rat hepatocytes

L4 ANSWER 50 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI The structural basis of the mutagenicity of chemicals in Salmonella typhimurium: The Gene-Tox data base

L4 ANSWER 51 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Genotoxicity of naturally occurring hydroxyanthraquinones

L4 ANSWER 52 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI ANTHRONES IN COMPARISON TO THEIR CORRESPONDING ANTHRAQUINONES ARE SEVERELY CYTOTOXIC BUT NOT GENOTOXIC

L4 ANSWER 53 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI TUMOR PROMOTING ACTIVITIES OF HYDROXYANTHRAQUINONES IN VARIOUS IN-VITRO ASSAYS

L4 ANSWER 54 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES

L4 ANSWER 55 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Genotoxicity of naturally occurring hydroxyanthraquinones

L4 ANSWER 56 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI STRUCTURE-ACTIVITY RELATIONSHIP OF THE GENOTOXICITY OF NATURALLY OCCURRING HYDROXYANTHRAQUINONES

L4 ANSWER 57 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Biochemical study of Chinese rhubarb. XIX. Localization of inhibition of anthraquinone derivatives on the mitochondrial respiratory chain

L4 ANSWER 58 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Experience with a screening method for laxative abuse

L4 ANSWER 59 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Effect of emodin on the mutagenicity of 3-amino-1-methyl-5H-pyrido[4,3-b]indole toward Salmonella

L4 ANSWER 60 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Mutagenicity of anthraquinone and benzanthrone derivatives in the Salmonella/microsome test: activation of anthraquinone glycosides by enzymic extracts of rat cecal bacteria

L4 ANSWER 61 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Frameshift mutagenicity of certain naturally occurring phenolic compounds in the Salmonella/microsome test. Activation of anthraquinone and flavonol glycosides by gut bacterial enzymes

L4 ANSWER 62 OF 62 TOXCENTER COPYRIGHT 2002 ACS

TI Anthraquinone drugs. XXII. Detection of anthrones in purgative drugs

TSCATS database: CAS number not found in TSCATS

Current Contents database

Search term: Aloe-emodin
Retrieval:

Authors: Ishii, Y; Takino, Y; Toyo'oka, T; Tanikawa, H
Title: Studies of aloe. VI. Cathartic effect of isobarbaloin
Source: BIOLOGICAL & PHARMACEUTICAL BULLETIN, 21 (11): 1226-1227 NOV 1998
Language: English
Document type: Article
IDS No.: 141XK

Authors: Yagi, SM; El Tigani, S; Adam, SEI
Title: Toxicity of Senna obtusifolia fresh and fermented leaves (kawal), Senna alata leaves and some products from Senna alata on rats
Source: PHYTOTHERAPY RESEARCH, 12 (5): 324-330 AUG 1998
Language: English
Document type: Article
IDS No.: 109XQ

Authors: Park, MK; Park, JH; Kim, NY; Shin, YG; Choi, YS; Lee, JG; Kim, KH; Lee, SK
Title: Analysis of 13 phenolic compounds in aloe species by high performance liquid chromatography
Source: PHYTOCHEMICAL ANALYSIS, 9 (4): 186-191 JUL-AUG 1998
Language: English
Document type: Article
IDS No.: 105BZ

Authors: Schorkhuber, M; Richter, M; Dutter, A; Sontag, G; Marian, B
Title: Effect of anthraquinone-laxatives on the proliferation and urokinase secretion of normal, premalignant and malignant colonic epithelial cells
Source: EUROPEAN JOURNAL OF CANCER, 34 (7): 1091-1098 JUN 1998
Language: English
Document type: Article
IDS No.: ZY254

Authors: Mueller, SO; Stopper, H; Dekant, W
Title: Biotransformation of the anthraquinones emodin and chrysophanol by cytochrome P450 enzymes - Bioactivation to genotoxic metabolites
Source: DRUG METABOLISM AND DISPOSITION, 26 (6): 540-546 JUN 1998
Language: English
Document type: Article
IDS No.: ZU557

Authors: Kuo, PL; Lin, TC; Lin, CC
Title: The antiproliferative activity of aloe-emodin is through p53-dependent and p21-dependent apoptotic pathway in human hepatoma cell lines
Source: LIFE SCIENCES, 71 (16): 1879-1892 SEP 6 2002
Language: English
Document type: Article
IDS No.: 586XF

Authors: Jiang, CQ; He, JX
Title: Simultaneous determination of Aloe-emodin and Rhein by synchronous fluorescence spectroscopy
Source: JOURNAL OF PHARMACEUTICAL AND BIOMEDICAL ANALYSIS, 29 (4): 737-742 JUL 20 2002
Language: English
Document type: Article
IDS No.: 577QG

Authors: Shindo, T; Ushiyama, H; Kan, K; Uehara, S; Yasuda, K; Takano, I; Saito, K

Title: Contents of barbaloin-related compounds in aloe drinks and their change during storage
Source: JOURNAL OF THE FOOD HYGIENIC SOCIETY OF JAPAN, 43 (3): 122-126 JUN 2002
Language: Japanese
Document type: Article
IDS No.: 569ME

Authors: Vargas, F; Fraile, G; Velasquez, M; Correia, H; Fonseca, G; Marin, M; Marcano, E; Sanchez, Y
Title: Studies on the photostability and phototoxicity of aloe-emodin, emodin and rhein
Source: PHARMAZIE, 57 (6): 399-404 JUN 2002
Language: English
Document type: Article
IDS No.: 565HD

Authors: van Gorkom, BAP; Timmer-Bosscha, H; de Jong, S; van der Kolk, DM; Kleibeuker, JH; de Vries, EGE
Title: Cytotoxicity of rhein, the active metabolite of sennoside laxatives, is reduced by multidrug resistance-associated protein 1
Source: BRITISH JOURNAL OF CANCER, 86 (9): 1494-1500 MAY 6 2002
Language: English
Document type: Article
IDS No.: 559NP

Authors: Woo, SW; Nan, JX; Lee, SH; Park, EJ; Zhao, YZ; Sohn, DH
Title: Aloe emodin suppresses myofibroblastic differentiation of rat hepatic stellate cells in primary culture
Source: PHARMACOLOGY & TOXICOLOGY, 90 (4): 193-198 APR 2002
Language: English
Document type: Article
IDS No.: 551YA

Authors: Vath, P; Wamer, WG; Falvey, DE
Title: Photochemistry and phototoxicity of aloe emodin
Source: PHOTOCHEMISTRY AND PHOTOBIOLOGY, 75 (4): 346-352 APR 2002
Language: English
Document type: Article
IDS No.: 542HY

Authors: Wasserman, L; Avigad, S; Beery, E; Nordenberg, J; Fenig, E
Title: The effect of aloe emodin on the proliferation of a new Merkel carcinoma cell line
Source: AMERICAN JOURNAL OF DERMATOPATHOLOGY, 24 (1): 17-22 FEB 2002
Language: English
Document type: Article
IDS No.: 517HY

Authors: Uno, H; Masumoto, A; Honda, E; Nagamachi, Y; Yamaoka, Y; Ono, N
Title: Intramolecular aldol-type condensation between side chains of naphthoquinones: Biomimetic synthesis of 1,6-and 1,8-dihydroxyanthraquinones

Source: JOURNAL OF THE CHEMICAL SOCIETY-PERKIN TRANSACTIONS 1, (23): 3189-3197 2001
Language: English
Document type: Article
IDS No.: 498NG

Authors: Lee, HZ; Hsu, SL; Liu, MC; Wu, CH
Title: Effects and mechanisms of aloe-emodin on cell death in human lung squamous cell carcinoma
Source: EUROPEAN JOURNAL OF PHARMACOLOGY, 431 (3): 287-295 NOV 23 2001
Language: English
Document type: Article
IDS No.: 500BT

Authors: Lee, HZ
Title: Protein kinase C involvement in aloe-emodin- and emodin-induced apoptosis in lung carcinoma cell
Source: BRITISH JOURNAL OF PHARMACOLOGY, 134 (5): 1093-1103 NOV 2001
Language: English
Document type: Article
IDS No.: 491BC

Authors: Shi, YQ; Fukai, T; Sakagami, H; Kuroda, J; Miyaoka, R; Tamura, M; Yoshida, N; Nomura, T
Title: Cytotoxic and DNA damage-inducing activities of low molecular weight phenols from rhubarb
Source: ANTICANCER RESEARCH, 21 (4A): 2847-2853 JUL-AUG 2001
Language: English
Document type: Article
IDS No.: 489GY

Authors: Maity, TK; Mandal, SC; Bhakta, T; Pal, M; Saha, BP
Title: Metabolism of 1,8-dihydroxy 3-hydroxy methyl anthraquinone (aloe-emodin) isolated from the leaves of Cassia tora in albino rats
Source: PHYTOTHERAPY RESEARCH, 15 (5): 459-460 AUG 2001
Language: English
Document type: Article
IDS No.: 463LV

Authors: Yang, FQ; Zhang, TY; Xu, GQ; Chou, FE; Ito, Y
Title: pH-modulated stepwise elution CCC and its application to the preparative separation of hydroxyanthraquinone compounds from traditional Chinese medicinal herbs
Source: JOURNAL OF LIQUID CHROMATOGRAPHY & RELATED TECHNOLOGIES, 24 (11-12): 1617-1628 2001
Language: English
Document type: Article
IDS No.: 456VP

Authors: Matsuda, H; Shimoda, H; Morikawa, T; Yoshikawa, M
Title: Phytoestrogens from the roots of Polygonum cuspidatum (Polygonaceae): Structure-requirement of hydroxyanthraquinones for estrogenic activity

Source: BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, 11 (14): 1839-1842 JUL 23 2001
Language: English
Document type: Article
IDS No.: 451MJ

Authors: Xu, CB; Yin, CL; Wang, SW
Title: Effect of aloe-emodin on expression of proliferating cell nuclear antigen of vascular smooth muscle cells in culture after arterial injury
Source: CHINESE MEDICAL JOURNAL, 114 (6): 571-576 JUN 2001
Language: Chinese
Document type: Article
IDS No.: 448WY

Authors: Semple, SJ; Pyke, SM; Reynolds, GD; Flower, RLP
Title: In vitro antiviral activity of the anthraquinone chrysophanic acid against poliovirus
Source: ANTIVIRAL RESEARCH, 49 (3): 169-178 MAR 2001
Language: English
Document type: Article
IDS No.: 421PQ

Authors: Wang, DX; Yang, GL; Engelhardt, H; Liu, HX; Zhao, JX
Title: Separation by capillary zone electrophoresis of the active anthraquinone components of the Chinese herb Polygonum multiflorum Thunb
Source: CHROMATOGRAPHIA, 53 (3-4): 185-189 FEB 2001
Language: English
Document type: Article
IDS No.: 406YT

Authors: Arosio, B; Gagliano, N; Fusaro, LMP; Parmeggiani, L; Tagliabue, J; Galetti, P; De Castri, D; Mocheni, C; Annoni, G
Title: Aloe-emodin quinone pretreatment reduces acute liver injury induced by carbon tetrachloride
Source: PHARMACOLOGY & TOXICOLOGY, 87 (5): 229-233 NOV 2000
Language: English
Document type: Article
IDS No.: 377CW

Authors: Strickland, FM; Muller, HK; Stephens, LC; Bucana, CD; Donawho, CK; Sun, Y; Pelley, RP
Title: Induction of primary cutaneous melanomas in C3H mice by combined treatment with ultraviolet radiation, ethanol and aloe emodin
Source: PHOTOCHEMISTRY AND PHOTOBIOLOGY, 72 (3): 407-414 SEP 2000
Language: English
Document type: Article
IDS No.: 352JX

Authors: Li, Y; Liu, XW; Ji, XH; Li, JL
Title: Optimized separation of pharmacologically active anthraquinones in Rhubarb by capillary electrochromatography
Source: ELECTROPHORESIS, 21 (15): 3109-3115 SEP 2000

Language: English
Document type: Article
IDS No.: 354FC

Authors: Agarwal, SK; Singh, SS; Verma, S; Kumar, S
Title: Antifungal activity of anthraquinone derivatives from Rheum emodi
Source: JOURNAL OF ETHNOPHARMACOLOGY, 72 (1-2): 43-46 SEP 2000
Language: English
Document type: Article
IDS No.: 352XM

Authors: Yen, GC; Duh, PD; Chuang, DY
Title: Antioxidant activity of anthraquinones and anthrone
Source: FOOD CHEMISTRY, 70 (4): 437-441 SEP 2000
Language: English
Document type: Article
IDS No.: 337CD

Authors: Camacho, MD; Kirby, GC; Warhurst, DC; Croft, SL; Phillipson, JD
Title: Oxoaporphine alkaloids and quinones from Stephania dinklagei and evaluation of their antiprotozoal activities
Source: PLANTA MEDICA, 66 (5): 478-480 JUN 2000
Language: English
Document type: Letter
IDS No.: 326XL

Authors: Pecere, T; Gazzola, MV; Mucignat, C; Parolin, C; Dalla Vecchia, F; Cavaggioni, A; Basso, G; Diaspro, A; Salvato, B; Carli, M; Palu, G
Title: Aloe-emodin is a new type of anticancer agent with selective activity against neuroectodermal tumors
Source: CANCER RESEARCH, 60 (11): 2800-2804 JUN 1 2000
Language: English
Document type: Article
IDS No.: 321BH

Authors: Weng, WC; Sheu, SJ
Title: Separation of anthraquinones by capillary electrophoresis and high-performance liquid chromatography
Source: HRC-JOURNAL OF HIGH RESOLUTION CHROMATOGRAPHY, 23 (2): 143-148 FEB 2000
Language: English
Document type: Article
IDS No.: 300GV

Authors: Matsuda, H; Kageura, T; Morikawa, T; Toguchida, I; Harima, S; Yoshikawa, M
Title: Effects of stilbene constituents from rhubarb on nitric oxide production in lipopolysaccharide-activated macrophages
Source: BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, 10 (4): 323-327 FEB 21 2000
Language: English
Document type: Article
IDS No.: 288AJ

Authors: Yang, FQ; Zhang, TY; Tian, GL; Cao, HF; Liu, QH; Ito, Y
Title: Preparative isolation and purification of hydroxyanthraquinones from Rheum officinale Baill by high-speed counter-current chromatography using pH-modulated stepwise elution
Source: JOURNAL OF CHROMATOGRAPHY A, 858 (1): 103-107 OCT 8 1999
Language: English
Document type: Article
IDS No.: 245CE

Authors: Hatano, T; Uebayashi, H; Ito, H; Shiota, S; Tsuchiya, T; Yoshida, T
Title: Phenolic constituents of cassia seeds and antibacterial effect of some naphthalenes and anthraquinones on methicillin-resistant Staphylococcus aureus
Source: CHEMICAL & PHARMACEUTICAL BULLETIN, 47 (8): 1121-1127 AUG 1999
Language: English
Document type: Article
IDS No.: 228XY

Authors: Ali, MIA; Shalaby, NMM; Elgamal, MHA; Mousa, ASM
Title: Antifungal effects of different plant extracts and their major components of selected Aloe species
Source: PHYTOTHERAPY RESEARCH, 13 (5): 401-407 AUG 1999
Language: English
Document type: Article
IDS No.: 229FM

Authors: Mueller, SO; Stopper, H
Title: Characterization of the genotoxicity of anthraquinones in mammalian cells
Source: BIOCHIMICA ET BIOPHYSICA ACTA-GENERAL SUBJECTS, 1428 (2-3): 406-414 AUG 5 1999
Language: English
Document type: Article
IDS No.: 228NH

Authors: Yagi, T; Yamauchi, K
Title: Synergistic effects of anthraquinones on the purgative activity of rhein anthrone in mice
Source: JOURNAL OF PHARMACY AND PHARMACOLOGY, 51 (1): 93-95 JAN 1999
Language: English
Document type: Article
IDS No.: 173LL

Authors: Izzo, AA; Sautebin, L; Borrelli, F; Longo, R; Capasso, F
Title: The role of nitric oxide in aloe-induced diarrhoea in the rat
Source: EUROPEAN JOURNAL OF PHARMACOLOGY, 368 (1): 43-48 FEB 26 1999
Language: English
Document type: Article
IDS No.: 173VX

Authors: Wang, HH; Chung, JG; Ho, CC; Wu, LT; Chang, SH

Title: Aloe-emodin effects on arylamine N-acetyltransferase activity in the bacterium Helicobacter pylori
Source: PLANTA MEDICA, 64 (2): 176-178 MAR 1998
Language: English
Document type: Letter
IDS No.: ZC256