# Seco-taondiol, an unusual meroterpenoid from the Chilean seaweed Stypopodium flabelliforme and its gastroprotective effect in mouse model

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Ten known meroterpenoids and the new meroterpenoid 7 were isolated from the Chilean seaweed Stypopodium flabelliforme as their acetylated derivatives. Furthermore, the known metabolite taondiol has been isolated for the first time from this species. The molecular structure of the new metabolite was determined by spectroscopic methods based on 1D- and 2D-NMR. Isolation of 7 represents a key step toward a better understanding of the biogenesis of this class of meroterpenoids. Among the meroditerpenoids isolated, stypodiol, isoepitaondiol, epitaondiol and sargaol exhibited gastroprotective activity on the HCl/Ethanol-induced gastric lesions model in mice. Regarding the mode of gastroprotective action, the activity of epitaondiol was reversed significantly when animals were pretreated with indomethacin, N-ethylmaleimide and N-nitro-L-arginine methyl ester (L-NAME) suggesting that prostaglandins, sulfhydryl groups and nitric oxide are involved in their mode of gastroprotective action. In the case of sargaol the gastroprotective activity was attenuated with indomethacin and N-ethylmaleimide, which suggests that prostaglandins and sulfhydryl groups are also involved in the mode of action using this model. 

Gastric ulcer

Gastroprotective

Meroditerpenoids

Seaweed

Stypopodium flabelliforme

epitaondiol

gastrointestinal mucosa protective agent

indometacin

isoepitaondiol

lansoprazole

n ethylmaleimide

n(g) nitroarginine methyl ester

nitric oxide

o 3 seco 9 ene 6 beta taondiol

prostaglandin

ruthenium red

sargaol

stypodiol

thiol derivative

unclassified drug

antiulcer agent

diterpene

epitaondiol

protective agent

sargaol

taondiol

terpene

animal experiment

animal model

animal tissue

Article

cell viability

controlled study

cytotoxicity

drug efficacy

drug isolation

drug mechanism

drug structure

IC50

in vitro study

in vivo study

mouse

nonhuman

seaweed

stomach lesion

stomach protection

Stypopodium flabelliforme

acetylation

animal

brown alga

cell line

chemical structure

chemistry

Chile

comparative study

disease model

drug development

drug effects

gastric mucosa

growth, development and aging

human

isolation and purification

Pacific Ocean

Polynesia

randomization

stereoisomerism

stomach ulcer

Animalia

Mus

Stypopodium

Acetylation

Animals

Anti-Ulcer Agents

Cell Line

Chile

Disease Models, Animal

Diterpenes

Drug Discovery

Gastric Mucosa

Humans

Mice

Molecular Structure

Pacific Ocean

Phaeophyta

Polynesia

Protective Agents

Random Allocation

Seaweed

Stereoisomerism

Stomach Ulcer

Terpenes