**A NOVEL METABOLITE FROM THE CHILEAN MOLLUSK Siphonaria lessoni**

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A new and two previously known metabolites possessing a polypropionate carbon skeleton have been isolated from the marine gastropod mollusk *Siphonaria lessoni*, collected at Chilean coasts. Their structures have been determined by spectroscopical methods.

Keywords: mollusk; *Siphonaria*; polypropionates.

**INTRODUCTION**

Mollusks of the marine pulmonate genus *Siphonaria* are air breathing intertidal herbivores, often referred to as false limpets. During the high tides, siphonariids remain firmly fixed to depressions or “home scars” in the rock surface. As the tide recedes these mollusks leave their home scars to feed on algae and microorganisms thus exposing themselves to predation by terrestrial predators, in addition to the aquatic predators e.g. tidepool fish encountered when they are submerged. Shortly after being disturbed by a potential predator, siphonariids produce a white mucus, containing polypropionate metabolites, from lateral pedal glands.

A feature of *Siphonaria* polypropionate compounds is their frequent cyclization to yield furanone, pyrone and hemi-acetal functionalities. Surprisingly, the role of these compounds in the chemical ecology of *Siphonaria* species is poorly understood.

*Siphonariid limpets have been shown to contain branched chain polypropionate metabolites of considerable biosynthetic interest*. For example, the air – breathing gastropod *S. diemenensis* contains the diemenensins A and B, compounds that display antimicrobial properties. On the other hand, the pulmonate *S. denticulata* Quay and Gaimard biosynthesizes the denticulatins A and B, polypropionate compounds that have attracted considerable attention from both synthetic and bioorganic chemists.

Chilean specimens of *S. lessoni* yielded norpectinatone 1, norsiphonarianone 2, norsiphonarienolone 3, and a mixture of furanone 4 and other isomer 9. The nature of this isomer is no clear because originally was suggested that is the Z- isomer but further it was assigned to the epimer of carbon 2. In addition, norsiphonarianone and norsiphonarienolone were found as a mixture. The isolation of mixture of polypropionates in these mollusks is not an unusual situation.

Over the last thirty years, many structurally novel polypropionate metabolites have been isolated from marine organisms as phylogenetically diverse as marine bacteria and sponges. The most important source of marine polypropionate compounds are the Mollusca.

In continuation of our search for new bioactive compounds from Chilean marine mollusks, we have reexamined specimens of *S. lessoni* from the central coast of Chile.

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was connected to a methyl group $\delta_5 0.86$ (q, 3H, $J = 6.4$ Hz; $\delta_4 14.6$). An ethyl group vicinal to a carbonyl group was deduced by the following signals: a methylene at $\delta_4 2.48$ (q, 2H, $J = 7.2$ Hz; $\delta_3 36.8$) coupled to the methyl group at $\delta_3 0.74$ (d, 3H, $J = 6.5$ Hz; $\delta_2 20.5$) and $\delta_2 0.76$ (t, 3H, $J = 7.4$ Hz; $\delta_1 20.5$); $\delta_1 0.86$ (q, 3H, $J = 6.4$ Hz; $\delta_0 20.5$). Finally, the ketone $\delta_0 2.48$ (q, 2H, $J = 7.2$ Hz; $\delta_9 14.6$). An ethyl group vicinal to a carbonyl group was deduced by the following signals: a methylene at $\delta_4 2.48$ (q, 2H, $J = 7.2$ Hz; $\delta_3 36.8$) coupled to the methyl group at $\delta_3 0.74$ (d, 3H, $J = 6.5$ Hz; $\delta_2 20.5$) and $\delta_2 0.76$ (t, 3H, $J = 7.4$ Hz; $\delta_1 20.5$); $\delta_1 0.86$ (q, 3H, $J = 6.4$ Hz; $\delta_0 20.5$). Finally, the ketone $\delta_0 2.48$ (q, 2H, $J = 7.2$ Hz; $\delta_9 14.6$). 

**EXPERIMENTAL PART**

Chromatography.

LH-20 obtained from Pharmacia was used for gel filtration chromatography.

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