



## Acetogenins from the red algae *Laurencia catarinensis*

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### Abstract

**Introduction:** Red algae of the genus *Laurencia* are distributed in many regions in the world and produce an amazing diversity of secondary metabolites, including sesquiterpenes, diterpenes, triterpenes, and acetogenins. They are frequently characterized by the presence of one or more halogen atoms in their structures. Many of these molecules either are biologically active or play an ecological role in their ecosystem, often exhibiting antibacterial, antifungal, antiviral, anti-inflammatory, cytotoxic or antifouling activity. *Laurencia catarinensis* was found for the first time in the coast of the state Santa Catarina and has afforded several halogenated sesquiterpenes, mostly with cytotoxic activity. **Objectives:** isolation and structure elucidation of minor compounds from the extract of *Laurencia catarinensis*. **Material and methods:** Specimens of the air-dried algae were exhaustively extracted with a mixture of CH<sub>2</sub>Cl<sub>2</sub>/MeOH (2:1). Evaporation of the solvent afforded the crude extract, which was subjected to vacuum column chromatography on silica gel, using hexane with increasing amounts of EtOAc, followed by EtOAc with increasing amounts of MeOH, to afford 20 fractions (A1-A20). Fraction A5 was fractionated by middle pressure liquid chromatography (MPLC) on silica gel, using hexane with increasing amounts of EtOAc, to afford 75 fractions (C1-C75). Fraction C18-20B4E was purified by normal-phase HPLC, using cyclohexane/Acetone (95:5), as eluent, to afford the pure compounds LCT8. The structure elucidation of the LCT8 was based on their spectroscopic data. The <sup>1</sup>H NMR spectrum of LCT8 was obtained in the spectrometers Bruker AC200 and Bruker DRX400. **Results and Discussion:** the infrared spectrum from the LCT8 indicated the presence of conjugated cis-enyne (3300 cm<sup>-1</sup>) and a strong band in 1010 cm<sup>-1</sup> suggested that oxygen were involved in ether links. The <sup>1</sup>H RMN spectrometers showed in 2,70 ppm, 5,08 ppm and 6,31 ppm suggest the partial structure from the conjugated cis-enyne, because, the values about the characteristic chemical shifts and the coupling constants. The triplet in 0,95 ppm must be bonded to a methylene. The <sup>1</sup>H RMN showed three methine protons (5,04 ppm, 4,25 ppm and 4,08 ppm) with the characteristic chemical shifts of proton ligand with oxygenic or halogenic compound. Comparison of the spectroscopical data of LCT8 with literature data confirmed its structure as an acetogenin named isomaneonene B. **Conclusion:** an acetogenin (isomaneonene B) is reported for the first time to *Laurencia catarinensis*.

**Keywords:** *Laurencia catarinensis*, red algae, acetogenin