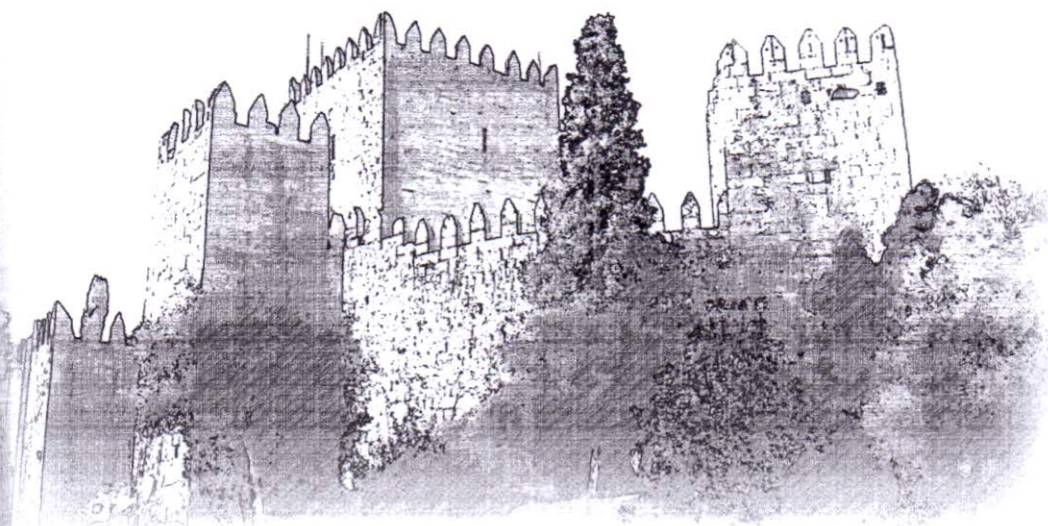


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# Book of Abstracts



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## P1L144 Isolation of the major compounds from the aerial parts of *Chresta martii* by high speed counter current chromatography (HSCCC)

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*Chresta martii* (DC.) H. Rob. (Asteraceae) is a plant found in the Xingó region (caatinga ecosystem) in North-eastern in Brazil, and is recognized by the local population as a traditional herb used to treat gastric diseases. Previous studies demonstrate significant *in vivo* protective effects of *C. martii* extract against indomethacin-induced gastric lesions in mice [1]. In order to isolate the active compounds and avoid any possible adsorption that can occur on silica gel columns, High Speed Counter Current Chromatography (HSCCC) was used for the first fractionation step. The coefficient of partition ( $K_p$ ) of each compound was first calculated using the peak area obtained by the HPLC-UV-ELSD analysis. The best conditions were obtained with using the quaternary system of heptane/EtOAc/MeOH/H<sub>2</sub>O (8.3:41.7:8.3:41.7, v/v/v/v). The separation of the crude extract (3 g) was achieved in one step. Fractions and pure compounds were monitored by HPLC-UV-ELSD. Using these approach sesquiterpene lactones and flavonoids were isolated in one step and some minor compounds purified on a second step by semi-prep HPLC. Their structures were elucidated by spectroscopic and chemical methods and the *in vivo* bioassay on the pure constituents are underway.

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## P1L145 *Pistacia lentiscus* oleoresin: virtual screening and *in vitro* 11 $\beta$ -hydroxysteroid dehydrogenase 1 inhibition

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*Pistacia lentiscus* var. Chia oleoresin, so called mastic gum, has traditionally been used to treat multiple conditions such as cough, sore throat, eczema, stomach aches, rheumatisms and diabetes [1]. Although clinical trials supporting these uses are limited, an *in vivo* study previously revealed an antidiabetic activity of *P. lentiscus* oleoresin [2]. *P. lentiscus* oleoresin contains a number of penta- and tetra-cyclic triterpenes [1], which exert antidiabetic effects and improve lipid metabolism. We recently identified oleanonic acid as a PPAR $\gamma$ -agonist through bioassay-guided fractionation of mastic gum [3]. Despite these findings, the antidiabetic mechanism of mastic gum remains mainly unknown. In the search for a potential mechanism of action of *P. lentiscus* oleoresin as traditional antidiabetic medicines, we performed a virtual screening using elaborated and validated pharmacophore models for 11 $\beta$ -hydroxysteroid dehydrogenase type 1 (11 $\beta$ -HSD1) inhibition [4]. A small focused database consisting of previously isolated compounds from this plant material was generated and virtually screened. According to the hit list we strongly supposed an interaction of triterpenes from mastic gum with 11 $\beta$ -HSD1, and therefore experimentally investigated the crude oleoresin and its acidic fraction. Additionally the two main constituents and predicted ligands, masticadienonic acid (**1**) and isomasticadienonic acid (**2**) (Figure 1), were tested against their inhibitory activity on 11 $\beta$ -HSD1 and 11 $\beta$ -HSD2. The results showed a significant inhibition of both the crude *P. lentiscus* oleoresin and its acidic fraction as well as a potent and selective inhibition of the two virtual hits **1** and **2** with IC<sub>50</sub>s of 2.51 and 1.94  $\mu$ M. These findings suggest that the selective inhibition of 11 $\beta$ -HSD1 may contribute to the antidiabetic activity of mastic gum.

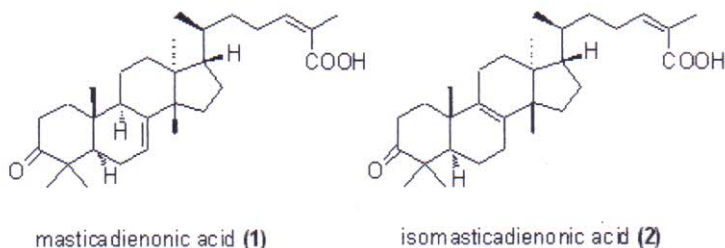


Figure 1. Main constituents of the acidic fraction of *Pistacia lentiscus* oleoresin.

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**Keywords:** *Pistacia lentiscus*, mastic gum, 11 $\beta$ -hydroxysteroid dehydrogenase, virtual screening, diabetes, triterpenes, masticadienonic acid, isomasticadienonic acid

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