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Centrifugal Partition Chromatography method optimization for the isolation of antibacterial compounds from the fruits of *Pistacia lentiscus*

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Herbal preparations from several parts of *Pistacia lentiscus* L. (Anacardiaceae) such as resin (mastic gum), fruits, leaves, oil have been traditionally used in the Mediterranean basin for more than 2,500 years for their medicinal properties [1]. Mastic gum of this species harvested from Chios Island (Greece) contains antibacterial triterpenes (24-Z-masticadienonic acid derivatives MAD) [2] but their isolation is tedious, due to the presence of a myrcene polymer. The chemical composition of the fruits, considered as a waste of mastic production, was never extensively studied. Thus, we focused on this part of the plant as a potential source of bioactive metabolites.

In a preliminary step, small amounts of MAD and salicylic acid derivatives (SAD) isolated from a fruit extract using silica gel chromatography have strongly inhibited the growth of *Gram+* aerobic and aerotolerant bacterial strains.

Centrifugal Partition Chromatography is a fast technique with feasible scale-up, based on the partition between two immiscible liquid phases. However, because of close polarity, SAD partially co-elute with triterpenes. A solvents combination including some percent of ammonia solution was then optimized in order to provide a better retention of the salicylates and an efficient separation of all of the targeted compounds in only one run with a good yield.

These results could lead to the valorisation of fruits and of their constituents as natural preservatives for food and cosmetic industry.

Acknowledgements

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References

[1] Assessment report on *Pistacia lentiscus* L., resin (mastix). EMA/HMPC/46756/2015 Committee on Herbal Medicinal Products (HMPC).

[2] Rodriguez-Garcia A et al. *Mini-Reviews in Organic Chemistry* 2017; 14:272-279.