



Unusual chemical composition of a Mexican propolis collected in Quitana Roo, Mexico

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Auteur	Boisard, Séverine [1], Tho Huynh, Thi Huong [2], Escalante-Erosa, Fabiola [3], Chavez, Luis Ignacio He [4], Peña-Rodríguez, Luis Manuel [5], Richomme, Pascal [6]
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Résumé en anglais

Propolis, or bee glue, is a natural resinous hive product collected by honeybees from buds and exudates of various trees and plants. Mixed with beeswax and salivary enzymes, it is used to fill in cracks and holes in the hive as well as a chemical weapon against intruders. It is well known that the chemical composition of propolis depends on the flora at the site of collection. The aim of this study was to compare two different propolis batches. The first one collected in France (south-west) and the second one in Quintana Roo, Mexico. The ethanolic extract of the French propolis (EEP) contained mainly polyphenols such as phenolic acids and their esters and flavonoids (poplar type), while the same kind of extract from the Mexican propolis showed only triterpenoids such as α and β -amyrin derivatives. Although the latter composition is quite unusual for a Mexican propolis, α and β -amyrins -and their derivatives- have been reported to occur in the resin of *Bursera simaruba*,¹ a tree that grows in Quintana Roo. Both propolis were evaluated in terms of their biological activity, including antioxidant (DPPH), anti-AGEs, antifungal (*Candida albicans* and *Aspergillus fumigatus*), and antibacterial (21 Gram-positive and Gram-negative strains including *Staphylococcus aureus*). Whereas French EEP exhibited high antioxidant and anti-AGEs activities,² as well as very good antifungal (towards *C. albicans*) and antibacterial (towards *S. aureus*) activities, Mexican EEP proved to be inactive. These results suggest that the chemical composition of the propolis collected in Quintana Roo is qualitatively and quantitatively of particular importance in the ecological interaction between the bees and the parasites and microorganisms that occur specifically in that region.

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