Antifeedant Activity of Some Polygodial Derivatives

Luis Moreno-Osorio[a,*], Manuel Cortés[b], Verónica Armstrong[b], María Bailén[c], and Azucena González-Coloma[c]

[a] Departamento de Ciencias Básicas, Facultad de Ciencias, Universidad del Bío-Bío, Casilla 447, Chillán, Chile. Fax: +56-42-253046. E-mail: lmoreno@ubiobio.cl
[b] Departamento de Química Orgánica, Facultad de Química, Pontificia Universidad Católica de Chile, Casilla 306, Correo 22, Santiago, Chile
[c] Centro de Ciencias Medioambientales, CSIC, Serrano 115dpdo, 28006 Madrid, Spain

* Author for correspondence and reprint requests

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Polygodial (**1**) and its derivatives acetal **2** (propylene) and **3** (ethylene) were prepared and their antifeedant activity and toxic effects evaluated on several insect species with different feeding ecologies (*Spodoptera littoralis*, *Leptinotarsa decemlineata*, *Myzus persicae* and *Rhopalosiphum padi*) along with that of polygonone (**4**). We also tested their selective cytotoxic effects on insect-derived (*Spodoptera frugiperda* ovarian Sf9 cells) and mammalian Chinese hamster ovary (CHO) cells. The antifeedant activity of these compounds was consistent with the proposed mode of action for antifeedant drimanes, *i.e.* adduct formation with amino groups for *M. persicae* and *R. padi* (dialdehyde > ketoaldehyde > aldehydeacetal). This was not the case for *L. decemlineata*, and the cytotoxic effects on insect-derived Sf9 and mammalian CHO cells (aldehydeacetal > dialdehyde > ketoaldehyde).

Key words: Polygodial Derivatives, Antifeedant, Cytotoxic