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Cytotoxic activity of bioconjugates produced from *Agave tequilana* fructans in cancer cell lines

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Carbohydrate fatty acid esters (CFAE) are non-ionic surfactants with a broad spectrum of applications in the food, cosmetic and pharmaceutical industries. These are biodegradable, non-toxic, odorless, and tasteless molecules that show anti-tumoral, plant growth-inhibiting and emulsification properties. CFAE can be obtained by chemical or enzymatic methods. In the enzymatic acylation, mono and disaccharides and longer linear molecules such as oligofructose have been used as sugar moieties. Recently, branched fructans from Agave plants are emerging in the market as ingredients for functional foods. These fructans show interesting properties for the pharmaceutical and functional food industries. Therefore, the aim of the present study was to investigate the cytotoxic activity against cancer cells of CFAE produced with branched fructose polymers, via enzymatic acylation reactions. We found that bioconjugates were highly toxic against a panel of cancer cell lines at concentrations ranging from 200 to 1000 µg/ml. These results suggest potential anticancer applications of the developed bioconjugates.

Biography

Moises Martinez Velazquez completed his PhD from Universidad Nacional Autonoma de Mexico. He is a Research Scientist at Medical and Pharmaceutical Biotechnology Unit, at CIATEJ. He has published more than 15 papers in reputed journals and published one book chapter.

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