# Babaco Latex as a Low Cost Lipolytic Biocatalyst: Evaluation of its typo-, regio-, and stereo- selectivities

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To date, the lipases that are generally used in industry come from microbial or animal sources. Owing to their large availability and their possible use without any purification, plant lipases could be cheaper biocatalysts. In the early nineties, high lipase activities were found in the latex of some species of *Caricaceae*, *Euphorbiaceae* and *Asclepiadaceae*. Among the *Caricaceae* family, the unripe fruit of babaco plant (*Vasconcellea×heilbornii*; syn. *Carica pentagona*), native to the subtropical mountains of Ecuador, contains a latex similar to the one in *Carica papaya*. Thanks to its high production yields in Ecuador and New Zealand, it represents a great commercial interest. In previous studies, Babaco latex has been shown to exhibit biocatalytic activities in lipolysis and acyltransfer reactions. To be able to use the plant extract in structured lipids production, its specificities need to be determined precisely. In this work, the typo-, regio- and stereo- selectivities of crude babaco latex lipase in both aqueous and organic solvents, in hydrolysis and acyl transfer reactions, are presented and compared to those of papaya latex. Experiments results show that both latex lipases are *sn*-1,3 regioselective but sole those in papaya latex present a slight *sn*-3 stereopreference. In reactions undertaken, babaco latex lipases are short fatty acid typoselective and seem to hydrolyze faster unsaturated fatty acyl groups than saturated ones. Thanks to these datas, lipids customizing applications using babaco latex as biocatalyst to obtain new products with designed physical and chemical properties could be selected and studied.