



Cloning and Characterization of a New Polyol Transporter (HbPLT2) in *Hevea brasiliensis*

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Mots-clés	<i>Hevea brasiliensis</i> [10], latex production [11], Polyol transporter [12], Quebrachitol [13]
Résumé en anglais	<p>Quebrachitol is a cyclic polyol and, along with sucrose, is one of the main sugars in <i>Hevea</i> latex. However, in contrast to sucrose, the mechanism and regulation of quebrachitol absorption is still unknown. Screening a latex-derived cDNA library using polyol transporter-specific probes, two full-length cDNAs were isolated, and named <i>HbPLT1</i> and <i>HbPLT2</i> (for <i>Hevea brasiliensis</i> polyol transporter 1 and 2, respectively). Their respective sequences exhibited close similarity with the previously cloned acyclic sugar polyol transporters, and shared the main features of the major facilitative superfamily. The functional activity of one of the cDNAs was determined by using an HbPLT2-complemented yeast strain. These strains displayed a marginal absorption of cyclic (inositol) and acyclic (mannitol and sorbitol) polyol but no absorption of sucrose, hexose and glycerol. Active absorption for xylitol was detected, and was competitively inhibited by quebrachitol. <i>HbPLT1</i> and <i>HbPLT2</i> expression patterns varied in response to different stimuli. Bark treatment with ethylene resulted in an early and significant up-regulation of <i>HbPLT2</i> transcripts in laticifers as well as in inner bark cells, when compared with <i>HbPLT1</i>. Other treatments, especially mechanical wounding, strongly induced <i>HbPLT2</i> transcripts. These data were consistent with the presence of ethylene and a wound-responsive regulatory cis-element on the sequence of the <i>HbPLT2</i> promoter. All these findings together with those recently obtained for sucrose transporters and aquaporins are discussed in relation to the different roles for quebrachitol in <i>Hevea brasiliensis</i>.</p>

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