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Production of *Hevea brasiliensis* Transgenic Lines Overexpressing Transcription Factors Involved in Ethylene Signalling Pathway

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Abstract: The gaseous plant hormone ethylene has a wide variety of applications in agriculture and horticulture. Ethephon, an ethylene releaser, is used to stimulate natural rubber production in *Hevea brasiliensis* latex cells. Ethylene Response Factors (ERF) are the last transcription factors of the ethylene signalling pathway and control a large number of ethylene-responsive genes. Two *Hevea ERF, HbERF-IXc4* and *HbERF-IXc5*, are orthologs to ERF1 a key regulator at the crosstalk of ethylene and jasmonate signalling pathways. These genes were suggested to play an important role in regulating latex cell metabolism in response to tapping and ethephon stimulation. We regenerated transgenic lines overexpressing *HbERF-IXc4* and *HbERF-IXc5* under the control of two promoters, *35S CaMV* and *HEV2.1*, respectively. The latter was shown to direct latex-specific expression in non-photosynthetic tissues. The somatic embryogenesis process was affected by these modifications. However, successful plant regeneration has been obtained. Further characterization of this plant material is in progress to understand the function *HbERF-IXc4* and *HbERF-IXc5* in latex.