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Genome-wide analysis of genes related to reactive oxygen species production and neutralization in *Hevea brasiliensis* and their regulation in laticifer

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Natural rubber is produced in laticifers of *Hevea brasiliensis*. Latex is the cytoplasm of laticifers. Latex harvesting by tapping and ethephon stimulation generates multiple stress into latex cells. Over a threshold of stress, redox homeostasis cannot be maintained that leads to oxidative stress resulting in latex flow stoppage and consequently to rubber yield reduction, a physiological syndrome called Tapping Panel Dryness (TPD). Given the availability of the sequence of rubber genome, the essential genes involved in production and scavenging of reactive oxygen species (ROS) were identified and their expression characterized in laticifer. Among the 452 *Hevea* redox-related genes, 160 were expressed in latex. The main pathways of ROS production and scavenging were predicted for each subcellular compartment based on sequence features and their expression levels upon ethephon and TPD.