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### Cloning And Characterization Of An ALMT1 Homologue Gene In Maize

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The toxic effect of aluminum (Al) in the root is one of the biggest problems of agriculture around the world. Exudation of Al-chelating molecules, such as organic acids with low molecular weight, seems to be an important Al-tolerance mechanism in several plant species. Therefore, genotypes with improved capacity to transport chelator molecules to apoplast and/or rhizosphere will be less affected by Al. Initially, a detailed analysis of organic acid exudation and electrogenic activity in roots of two Al-contrasting maize genotypes was carried out to help understand the response of organic acid exudation and its association with transport activity at root level to the maize genotypes studied. Further we have identified in the Al-tolerant genotype a gene homologue to ALMT1 from wheat. ALMT1 was recently reported as a malate transporter induced by Al and the maize homologue of ALMT1 was named MAIT (Maize Aluminum Induced Transporter). The genetic characterization of MAIT shows that this gene is single copy in maize and its expression profile in roots of two Al-contrasting maize genotypes is repressed by toxic levels of Al. The characterization of MAIT protein indicated it is a membrane protein with transport activity induced by Al in *Xenopus laevis* oocytes. However, we are not able to check if this protein was specifically involved with malate or citrate transport. Although MAIT shares several similarities to ALMT1 from wheat, its role in maize remains unclear. GMAC was recipient of scholarships from FAPEMIG and CAPES.