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Implication of the vacuolar AtPAP26 in the sugars metabolism in *Arabidopsis thaliana* roots

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«Purple Acid Phosphatases» (PAPs) are acid phosphatases found in both the animal and vegetal kingdoms. They are characterized by the presence of seven conserved amino acids involved in a dimetal nuclear center and by their pink/purple color in solution [1]. In plants, some purified PAPs have a phosphatase activity on phosphorylated metabolites (PEP, G6P ...) and peptides (e.g. glycosidases) [2]. Furthermore, a peroxidase activity has demonstrated in vitro [3]. PAPs could be implicated both in the metabolism regulation and in the detoxification of reactive oxygen species [4]. To date, 29 different genes encoding PAPs were identified in the *Arabidopsis thaliana* genome. Some of them are induced by Pi deprivation, oxidative burst or senescence. The gene encoding the protein AtPAP26 (At5g34850) exhibits high sequence similarity with orthologs from other plants [3]. The AtPAP26 protein, showing both a phosphatase activity on PEP and G6P and a peroxidase activity, was localized in the vacuole [5] but also appears to be one of the principal root-secreted acid phosphatases [6].

Our aims are to: **1°**/ analyse the potential role of AtPAP26 in the sugars metabolism and in their vacuolar storage. Our first hypothesis is that PAP26 could be involved in the glucose accumulation in the vacuole *via* its phosphatase activity [7]. To perform this, we are following the incorporation of U-C¹⁴ labeled hexoses in *Arabidopsis* roots to measure sugars turnover. **2°**/ Verify the potential implication of AtPAP26 on the dephosphorylation of target proteins.

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Mots-clés : *Arabidopsis thaliana*, sugar metabolism, roots, vacuole