

ANALYSIS OF THE *EMBOTHRIMUM COCCINEUM* ROOT AND LEAF PROTEOME DURING PROTEOID ROOT DEVELOPMENT

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Embothrium coccineum (Notro) is a tree that grows in the temperate forests of Chile. Its interest is related to its capacity to form proteoid roots when growing in soils with poor nutrients. This type of root was defined by Watt and Evans in 1999, as a primary lateral root with defined clusters of more than ten secondary lateral roots (proteoid rootlets) per centimeter. They enhance nutrient uptake, possibly by chemically modifying the soil environment to improve nutrient solubilisation. Although the metabolism and nutrient uptake in proteoid roots has been well characterized in *Lupinus albus*, the mechanism governing its induction is almost unknown. We are using Notro as an experimental system to study proteoid root induction from a molecular point of view. In this report, we present preliminary experiments in which the root and leaf proteome is being analyzed during proteoid root development. The experimental design included three different stages (young, mature and senescent proteoid roots) and two treatments (high, 1mM, and low, 0,001mM phosphorus concentrations). The protein extract was obtained by using the TCA-Acetone-Phenol, giving protein yields of 3 and 9 µg per mg of dry powder of root and leave tissue, respectively. Two-dimensional gel electrophoresis of protein extracts are being carried out, with IEF in the 5-8 pH range, and SDS_PAGE with 12% PAA gels. The biological variability will be determined by using 6 replicates. Differences in the 2-DE map of the different samples will be determined after careful statistical analysis, and differential spots subjected to MALDI-TOF-TOF MS.