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SEED PRIMING ENHANCES TOLERANCE AND ACCUMULATION OF HEAVY METALS IN CD HYPERACCUMULATOR *SILENE SENDTNERI* THROUGH CHANGES IN GENE EXPRESSION

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To improve our understanding of the molecular mechanisms underlying seed priming, RNA transcriptome analysis was performed using primed and non-primed seeds of *Silene sendtneri*. Seed priming was performed by submerging the seeds in different priming agents for 24h at 4°C, followed by rinsing with sterilized water and desiccation to the original moisture content. *Silene sendtneri* is a species with no sequenced genome and annotation of de novo assembly of the transcriptome was done using different species for the reference genome. Gene ontology (GO) analysis indicated that genes related to heavy metal transporters and heat shock proteins are differentially expressed after priming in relation to the used priming agent. Within these gene categories, genes such as heavy metal-associated isoprenylated plant protein 26-like (log2fold -8.79) were downregulated, while others such as heavy metal ATPase 5 (log2fold 6.46), heat shock factor protein HSF30-like isoform X1 (log2fold 5,98) were upregulated. Some gene categories are commonly highly expressed after seed priming regardless of the used agent, but some specific gene categories have been recorded to be expressed in relation to the used agent.

Keywords: Cd hyperaccumulator, heavy metal tolerance, seed priming, primed memory

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