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***“Amazing Biochemistry”***

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# Exoinulinase gene expression in *Aspergillus welwitschiae* FAW1 induced by different carbon sources

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Fungal inulinases have wide application in industrial biotechnology, and it is presumed that their expression is regulated at the transcriptional level via promoter<sup>1</sup>. It is also known that different sugars have an inducing effect on gene expression in fungal genome, including inulinases<sup>1,2</sup>. Aim of this work was to determine which of the sugars used in growth medium, as the only carbon source, induce the extracellular exoinulinase gene *inuE* expression in *Aspergillus welwitschiae* FAW1. Inulin, raffinose, sucrose, glucose and fructose were used as carbon sources, and expression of *inuE* was monitored during 72 h of cultivation (tested after 24, 36, 48 and 72 h). Both, presence of mRNA in the mycelia and extracellular enzyme activity in the growth media were monitored. Interestingly, obtained results showed that *inuE* was induced by fructose, sucrose and raffinose and not by inulin. In all cases, the highest mRNA was detected after 24 h of cultivation, while extracellular exoinulinase activity increased from 24 h with a peak in 72 h. Further experiments are necessary for a comprehensive understanding of the regulation mechanisms of *AweinuE* promoter for its more purposeful application in biotechnology.

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