

EVALUATION OF BETA-GLUCOSIDASE ACTIVITY AND MOBILIZATION OF PHENOLIC ANTIOXIDANTS FROM SOYBEAN POWDERS BY DIFFERENT FUNGI
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The soybean powder contains polyphenols such as isoflavonoids in different glucones and aglucones forms. The highest biological activity and absorption of soybean polyphenols are related to the presence of aglucones forms. It has been suggested the use of β -glucosidase, which hydrolyzes β -glucosidic links modifying the polyphenol β -glucosides forms into aglucones ones, in order to increase the biological activity. The aim of this work was to evaluate the biotransformation potential of soybean powder by *A.awamori*, *A.niger*, *A.niveus* and *T.reseei* fungi. The bioprocess was monitored by the β -glucosidase activity measurement using *p*-NPG as substrate, by the quantification of polyphenol and genistein (CLAE) contents and by *in vivo* antioxidant activity (inhibition of H₂O₂ TPA-induced in hairless skin). The results indicated that the soybean powder induced β -glucosidase production by all different fungi studied. The presence of β -glucosidase was followed by the increase of polyphenols mobilization and genistein content, as well as, the *in vivo* antioxidant activity. The extracts obtained by soybean powder fermentation using *A.awamori* and *A.niger* fungi induced an increase of the protective effect against H₂O₂ TPA-induced in hairless skin when compared to unfermented extract. The results showed that fermentation was effective in the mobilization of phenolic antioxidants and it increased the antioxidant capacity. However, the extent of this increase varied between the organisms employed.

Key Words: fermentation, soybean, antioxidant, beta-glucosidase.

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