

عنوان مقاله:

Partial purification of Glutathione S transferase from Gammarus using ammonium sulfate precipitation

محل انتشار:

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خلاصه مقاله:

Glutathione S-transferase (GST) is a multifunctional enzyme that is thought to plays a role in the start of xenobiotic detoxification process. This enzyme catalyzes the reaction between xenobiotic compounds and the -SH groups. This reaction leads to reduced biological activity and increased solubility. So, the resulting compounds are more polar and therefore easier to remove. Gammarus species are sensitive to a wide range of contaminant sand are suitable for the detection of environmental pollutants therefore they can be used as a model organism in the study of environmental pollution. The partial purification of GST was the main purpose of this study. In order to reduce the volume, concentration and purification of proteins, various precipitation methods can be used. Salting out with appropriate concentration of ammonium sulfate, which is a highly soluble salt, separate protein with different solubility. In our study solid ammonium sulfate with final concentration of 60% and 90% was added to Gammarus homogeneous and the mixture was stirred until dissolving of the salt. The suspension was centrifuged at 18000×g for 20 minutes, then the supernatant was dialyzed overnight at 4 C against 100 mM phosphate buffer, pH=7. Protein concentration was estimated by Bradford method and GST activity was assayed by Habig method. Protein concentration was decreased in supernatant of both 60% and 90% saturations. Enzyme activity had a 3-fold decrease in 90%, but on the contrary, a 4-fold increase was observed in enzyme activity in 60% saturated solution. In conclusion, the findings suggest precipitation with ammonium sulfate affords a procedure for concentrating as well as purifying the enzyme.

کلمات کلیدی:

Gammarus, Glutathione S transfrase, Ammonium sulfate Precipitation, Purification

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