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Characterization of Purified Glutathione S-Transferase (GSTs) from Fasciola hepatica and Liver Tissue by Two-Dimensional Electrophoresis (2-DE)

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Abstract:

Two-dimensional electrophoresis (2-D electrophoresis) is a powerful and extensively used method for analysis of complex protein mixtures extracted from cells, tissue, or other biological samples such as helminth parasites including, F. hepatica. Each spot on the resulting two-dimensional collection corresponds to a single protein species in the sample. This study was carried out to detect of GSTs isoenzyme spots map for collection of highly specific proteins. For this purpose, GSTs were purified from adult parasite of F.hepatica and sheep liver tissue as an enzyme pool by a glutathione affinity matrix using a wash-bath method and investigated for sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE) pattern. For 2-DE, purified GSTs from F.hepatica and sheep liver tissue were resuspended in sample buffer and then run on a IPG strip in the first dimension and then on an Excel Gel SDS in the second dimension before protein spots staining with Coomassie blue. The obtaining spots in the gels were compared and GSTs protein spots were detected with similar molecular weight, 26 kDa. The protein spots which are recorded in this paper could be GSTs isoenzymes and are highly specific peptids. These findings may be considered for vaccination or chemotherapeutic targets in sheep and human fascioliasis.

Keywords:

Double dimension electrophoresis (2-DE) ، Glutathione S- Transferases (GSTs)

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