

Comparison of staining methods for two dimensional electrophoresis gel resolved with Puntius javanicus liver proteome

Abstract

The aim of this study was to compare the various staining methods based on comassie brilliant blue and silver nitrate stain for the two dimensional gel electrophoresis resolved with Puntius javanicus liver proteome. The staining methods were selected base on the previous report about their compatibility with the mass spectrometry analysis. Silver staining method is known as the most sensitive method to visualize the maximum number of protein spots resolved in 2D gel but it is less sensitive (incompatible) toward mass spectrometry detection. Results of this study showed that a modified staining method using colloidal comassie blue G-250 (CCB) is roughly similarly sensitive but lower protein spot detected compared with silver staining (SS) as indicated at the number of 303 ± 26 and 693 ± 14 of protein resolved in both types of stained gels. The conventional methods of staining using comassie brilliant blue G-250 and R-250 only detected less number of protein spots (128 ± 17 and 78 ± 11 , respectively) compared to modified CCB staining method. As the comassie brilliant blue stain is known to be a very sensitive for mass spectrometry detection, the modified method of CCB was selected for further study on Puntius javanicus liver proteome.

Keyword: P. javanicus; Proteomic; CBB R-250; CBB G-250; Silver nitrate