

PB-1

ENRICHMENT OF PROTEIN SPOTS AND  
ENHANCEMENT OF THE GEL RESOLUTION IN  
THE ALKALINE REGION

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The number of protein spots on a gel by separation of protein mixture through 2-dimensional gel electrophoresis (2-DE) is very smaller than whole proteins expressed in a cell. This is mainly due to difficulty in entrance of low abundant proteins, separation of hydrophobic proteins and especially poor focusing in the alkaline region (pH>7) during isoelectric focusing (IEF). The present study results more spots with over 150% increase and full focusing in the alkaline region were observed in the gel from rice leaves, using 200mM tris in lysis solution. There were differences in concentration of tris in lysis solution to maximize the increase of protein spots and optimization of focusing according to species and protein sample purity, however, similar effect were observed in Arabidopsis and E.coli. Maintaining proper basic condition, this 200mM tris-lysis solution effectively enhance the gel resolution, thereby enabling comparison and identification of more protein spots.