

Proteomic analysis of a microsomal subcellular fraction from lactating bovine mammary tissue

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A proteomic investigation of a microsomal subcellular fraction from lactating bovine mammary tissues was carried out using 2-DE with MALDI TOF MS and 1-DE with RPLC ESI MS MS. 2-DE allowed 210 protein identifications, of which 45 (21.5%) were microsomal proteins and 39 (18.6%) membrane proteins including 17 transmembrane proteins. 1-DE revealed 723 proteins, of which 211 (29.3%) were microsomal proteins and 204 (28.3%) were membrane proteins including 167 transmembrane proteins. From the point of view of biological functions, 50 (23.2%) of the microsomal proteins are involved in protein biosynthesis, 64 (30.4%) in protein folding, trafficking, assembly, sorting and secretion and 22 (10.3%) were related to lipid metabolism, transport and secretion, which is consistent with the prediction of the biological functions of microsomes. Comparison of 2-DE and 1-DE results shows that the performance of 1-DE in combination with RPLC ESI MS/MS was much greater than that of 2-DE with regard to membrane proteins. The data reported here presented a comprehensive proteome survey of the enriched microsomal fraction from the lactating bovine mammary tissues, which provides knowledge for understanding molecular mechanisms in mammary glands.