Proteome analysis of Escherichia coli periplasmic proteins in response to over-expression of recombinant human interferon α2b

ABSTRACT

The periplasmic proteome of recombinant E. coli cells expressing human interferon-Ŭ2b (INF-Ŭ2b) was analysed by 2D-gel electrophoresis to find the most altered proteins. Of some unique up- and down-regulated proteins in the proteome, ten were identified by MS. The majority of the proteins belonged to the ABC transporter protein family. Other affected proteins were ones involved in the regulation of transcription such as DNA-binding response regulator, stress-related proteins and ecotin. Thus, the production of INF-Ŭ2b acts as a stress on the cells and results in the induction of various transporters and stress related proteins.

Keyword: ABC transporter proteins; DNA-binding response regulator; Escherichia coli; Human interferon Ŭ2b; Periplasmic proteome; Stress-related proteins