Characterization of different reactive lysines in bovine heart mitochondrial porin. Aljamal JA. Faculty of Pharmacy, Philadelphia University, 19392 Amman, Jordan.

Abstract

Incubation of mitochondrial outer membrane porin with citraconic anhydride prior to treatment with fluorescein isothiocyanate (FITC) resulted in the labeling of a set of lysines located at a boundary between the water phase and lipid phase. The elution pattern of porin from the cation exchanger has been considered as indicative for the location of lysines. Electrical measurements after reconstitution of the modified protein in lipid bilayer membranes revealed that certain specific lysine residues are more susceptible to alterations. The innermost positive residues were only slightly influenced, while the outermost lysines exhibited a substantial change in channel properties. These results suggest the presence of critical charged residues in mitochondrial outer membrane porin that may be responsible for both the channel's selectivity and its voltage dependence.