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MICROBIOLOGICAL RESEARCH

Organization of multi-binding to host proteins: the glyceraldehyde-3-phosphate dehydrogenase (GAPDH) of *Mycoplasma pneumoniae*

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ABSTRACT

Mycoplasma pneumoniae is a frequent cause of community-acquired infections of the human respiratory tract. During the evolutionary adaptation of the bacteria to the host, the genome of the pathogen is strongly reduced resulting in the loss of cell wall, limited metabolic pathways and a relatively small number of virulence factors. As interacting with host proteins, surface-exposed proteins with a primary function in cytosol-located processes of metabolism and regulation such as glycolytic enzymes, heat-shock proteins and chaperones have been considered as contributing to pathogenesis. Among these moonlighting proteins, some members are confirmed as binding to several host components. The glyceraldehyde-3-phosphate dehydrogenase (GAPDH) of *M. pneumoniae* is a typical example of such multi-binding proteins. To investigate the organization of these interactions, GAPDH was divided into four parts. Recombinant proteins were successfully expressed in *Escherichia coli* and polyclonal antisera were produced. Binding of full

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