

# The $\alpha$ -isoform of heat shock protein hsp-90 is structurally related with human microtubule-interacting protein Mip-90

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Through major research advances in the study of cytoskeletal organization, an integrated view of the complexity of this system has emerged. Recent findings on the microtubule-interacting protein Mip-90, which associates with microtubules and actin filaments in different cell domains, have shed light on its roles in cytoskeletal regulation. In order to study structural features of Mip-90, we sequenced several peptide fragments. A comparative sequence analysis revealed a high degree of similarity between the primary structure of this protein and the human heat shock protein of 90 kDa (hsp-90). Taken together, the present studies indicate the identity between Mip-90 and the  $\alpha$ -isoform of hsp-90 (hsp-90 $\alpha$ ). Western blot assays with an anti-hsp-90 monoclonal antibody showed cross-reactivity of hsp-90 and Mip-90 affinity purified from HeLa cells. Furthermore, the observed structural identity of Mip-90 with the hsp-90 $\alpha$  was sustained by immunoblot assays using monoclonal antibodies that spec