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Novel roles of Hsp90 inhibitors and Hsp90 in: Redox regulation and cytoarchitecture

Amere Subbarao Sreedhar* and Peter Csermely

Department of Medical Chemistry Semmelweis University School of Medicine
Semmelweis University, Hungary

Abstract

The 90 kDa heat shock protein (Hsp90), the most abundant, highly evolutionarily conserved molecular chaperone in eukaryotic cytosol plays a central role in cell physiology. The Hsp90 chaperone system functions to promote and maintain the conformational maturation of a large variety of client proteins like the hormone receptors. Also the direct and transient association of Hsp90 with cancer-associated signaling molecules like, p53, Bcr-Abl, Raf-1, Akt, HIF- α , Met and Her2/neu is involved in tumor progression. Numerous natural and synthetic Hsp90 inhibitors have been developed in recent years. These drugs change the direction of the Hsp90 complex-mediated assistance from protein folding to protein degradation. Some of these inhibitors are also involved in sensitizing tumor cells to pro-apoptotic insults hence serve as anti-cancer drugs. Here we review these novel Hsp90

*On leave from Centre for Cellular and Molecular Biology, Hyderabad, 500 007, India.