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# A small heat shock proteins: Present understanding and future prospective

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## Abstract

Heat shock proteins are important for maintaining protein homeostasis and cell survival. Among different classes of highly conserved Hsps, small low molecular weight Hsps have significant place, particularly of Hsp27, whose role has been demonstrated in wide range of biological processes, including development, immunity, diseases and therapy. In this review, the structure and functions of Hsp27 and related genes, their role in different cellular processes as well as in stress tolerance is highlighted.

**Key words**

Hsp27, α-crystallin, apoptosis, development, *Lucilia cuprina*, *Drosophila*



## Introduction

Small heat shock proteins (sHsps) are a group of proteins which express ubiquitously from prokaryotes to eukaryotes. Small Hsps are structurally different from other Hsps due to their less nucleotide and amino acid sequence conservation. It consists of eleven members that are characterized by a molecular signature i.e. a conserved crystallin domain, flanked by variable N and C-terminal. Hsp27 (HspB1), αA-crystallin (HspB4) and αB-crystallin (HspB5), are studied