

**P012** Curcumin Induces an Atypical Stress Response  
in Hepatoma Cells

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The heat shock response is a cytoprotective process which could be harnessed for therapeutic benefit. We investigated the effects of curcumin on the stress-response in a human hepatoma cell line, and assessed its preconditioning potential. HUH7 hepatoma cells were used. Western blotting and transfections with reporter constructs were used to assess induction of Hsp70 and Heme oxygenase 1 (HO-1). Heat shock factor 1 (HSF-1) activation was assessed by EMSA and native gel electrophoresis. Pretreated cells were tested in a model of oxidative injury. Curcumin treatment induced heme oxygenase 1 but not Hsp70. Curcumin treatment produces nuclear localisation of HSF-1, but does not initiate the trimerisation or hyperphosphorylation required for transcriptional activation. HSF-1 in curcumin treated cells was, however, more sensitive to chemical crosslinking. curcumin pretreatment had a cytoprotective effect against oxidative injury compared with untreated controls (150% vs 100%,  $p < 0.05$ ). Curcumin produces changes in HSF-1 but does not lead to transactivation of HSF-1-dependent proteins. It does however induce HO-1. Curcumin treatment is cytoprotective against oxidative injury. This may be mediated through HO-1 rather than the classical stress response.