Heat Shock Factors HSF1 & HSF2 Rat Monoclonal Antibodies

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Technology description

This invention describes antibodies directed against heat shock factors, HSF1 and HSF2.
HSFs (also designated heat shock transcription factors) are involved in the transcriptional regulation of heat shock proteins (HSPs) which are rapidly induced in organisms in response to various environmental and physiological stresses. These antibodies are rat monoclonal IgGs and have been utilized for the detection of HSF1 and HSF2 by immunohistochemistry, DNA gel shift assays, Western blotting and immunoprecipitation. 10H8 may also be used in the preparation of immunoaffinity columns for the purification of recombinant HSF1.

Scientific background
Heat shock proteins and molecular chaperones are involved in many cellular metabolic processes including protein synthesis, folding/assembly, membrane translocation and degradation in normally growing cells. Under stress conditions, abnormal proteins increase and rapid and transient activation of a group of genes, collectively designated HSP genes, occur. The induction of heat shock genes in eukaryotes is controlled at the transcriptional level. HSF1 and HSF2 are involved in this regulation. Upon activation HSF1 and HSF2 form trimers, gain DNA binding activity and translocate to the nucleus. The inducible transcription of heat shock genes is mediated by HSF1 which responds to the classical inducers of the stress response such as heat shock, amino acid analogs, heavy metals, oxidative stress, anti-inflammatory drugs, and arachidonic acid. HSF2 is activated during early embryogenesis, spermatogenesis and erythroid differentiation. The antibodies to HSF1 and HSF2 described here will be valuable reagents in the study of the regulation of the heat shock response and the analysis of these factors.

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