

A CONSERVED GROUP OF CCCH ZINC FINGER PROTEINS IS INVOLVED IN RESPONSE TO ABIOTIC STRESSES IN *DURUM* WHEAT, *ARABIDOPSIS* AND RICE

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CCCH zinc finger domain, abiotic stress, durum wheat, Arabidopsis, rice

A gene coding for a CCCH zinc finger protein, 2H8, was isolated in durum wheat and characterised as responsive to cold and dehydration stresses. CCCH zinc finger domain consists of a sequence with three cysteines and one histidine residues with strictly defined spacing: CX(8)CX(5)CX(3)H. First identified in proteins of Tristetraprolin family in mammals, involved in regulation of stability of cytokine mRNAs, this domain has been found in other RNA-binding proteins, also in plants, as HUA1, a regulator of stamen and carpel identities in Arabidopsis. A gene family of about seventy members coding for CCCH proteins was described in Arabidopsis and rice. A sub-group of this family contained the most similar sequences to durum wheat 2H8 gene, and these sequences were found to be responsive to abiotic stress treatments in terms of transcript accumulation in both Arabidopsis and rice, suggesting that these genes could be implicated in control of RNA metabolism in stress conditions. Ten cDNA sequences from wheat EST database, found on the basis of similarity with 2H8 and CCCH genes regulated by stress in Arabidopsis and rice, were characterized for expression profile in cold and water stress conditions. A functional study is in course based on expression in heterologous systems and in vitro DNA/RNA binding assay for 2H8 and homologous proteins in Arabidopsis.