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CREB Family Gene

National Cancer Institute

Source

National Cancer Institute. *CREB Family Gene*. NCI Thesaurus. Code C38534.

Ubiquitously or widely expressed human CREB Family Genes (bZIP/CREB Family) encode conserved cAMP Responsive Element Binding Proteins, nuclear bZIP domain dimeric transcription factors that bind to octameric DNA palindrome cAMP-response elements (CRE) present in many viral and cellular promoters and induce gene transcription in response to cAMP signaling pathways. CREB proteins bind to DNA as a homodimer or a heterodimer with JUN/c-Jun or ATF2/CREBP1. Increased cAMP levels following stimulation activate cAMP-dependent protein kinase A, which phosphorylates CREB proteins that stimulate transcription of cAMP-responsive genes. Calcium-regulated CREB transcription factors integrate calcium and cAMP signals. cAMP pathways provide a chief means by which cellular growth, differentiation, and function can be influenced by extracellular signals. (NCI)