General transcription factor II-I (GTF2I/TFII-I/SPIN/BAP-135) is a transcription factor that contains six directly repeated 90-residue regions, which possess helix-loop-helix protein-protein interaction motifs. TFII-I can regulate transcription in T-cells through interaction with the initiator elements (Inrs) within the AdML and Vβ promoters, and associates with HIV-1, TdT, and ribonucleotide reductase R1 Inrs. In addition, TFII-I associates with the E box motif, the CACGTG sequence, and with serum response element sequences. The helix-loop-helix repeats facilitate TFII-I interaction with other transcription factors, such as USF, Myc, Phox 1, MADS box protein serum response factor, and STATs. TFII-I was also identified as Bruton's tyrosine kinase (btk)-associated protein (BAP-135). TFII-I/BAP-135 is tyrosine phosphorylated by btk and after EGF stimulation, and this phosphorylation enhances TFII-I transcriptional activity. The wide expression of TFII-I and the interaction of TFII-I with various Inrs and transcription factors implicates TFII-I in various signaling pathways that regulate gene transcription.

References