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HMGB Family Protein

National Cancer Institute

Source

National Cancer Institute. *HMGB Family Protein*. NCI Thesaurus. Code C20326.

The HMG-Box Family proteins are relatively abundant vertebrate DNA-binding and bending proteins that bind with structure specificity, rather than sequence specificity, and plays an architectural role in the assembly of nucleoprotein complexes. They have two homologous HMG-box DNA-binding domains connected by a short basic linker to an acidic carboxy-terminal tail that differs in length. The length (and possibly sequence) of the acidic tail may be the dominant factor in mediating the differences in properties among themselves and finely tunes the DNA-binding properties of the tandem HMG boxes, to fulfill different cellular roles. The tail is essential for structure-selective DNA-binding of the HMG boxes to DNA minicircles in the presence of equimolar linear DNA, and has little effect on the affinity for this already highly distorted DNA ligand, in contrast to binding to linear and four-way junction DNA. (J Mol Biol 2000 304:135-49)