

Different DNA binding modes for p53 tumor suppressor

Tumor suppressor p53 is a transcription factor that plays a central role in cell cycle control, and mutations in the protein are related to nearly 50 % of human tumours. Collaboration between groups of Alan Fersht (MRC) and Mikel Valle (CICbioGUNE) has provided new insight into the structure of p53 tetramers while bound to DNA. In their study, p53 tetramers were observed in the interaction with various DNA probes. The 3D electron microscopy maps obtained for p53 tetramers reveal distinct binding modes in equilibrium, and suggest co-existence of specific and non-specific recognition of DNA. The structures provide snapshots of p53 tetramers consistent with p53 sliding along DNA during searches for specific binding sites. These findings were published in Proc. Natl. Acad. Sci. USA journal.

<http://www.pnas.org/content/108/2/557.abstract>

