WD Repeat

National Cancer Institute

Source

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WD40 Repeats are found in signal transduction, mRNA processing, cytoskeletal assembly, and cell cycle proteins; none are catalytic. G-beta is the prototypic WD40 protein. WD-40 proteins contain 5-8 repeats of about 40 residues, with a central Trp-Asp (WD) motif. The repeats may span the entire protein or make up either terminal or the central section. WD40 domains serve as a platform to which proteins stably or reversibly bind; some may recognize phosphoSer and -Thr peptides. The repeat forms a closed ring propeller with seven blades each composed of a four-stranded anti-parallel b-sheet. Each repeat forms the first three strands of one blade and the last strand in the next blade. The last C-terminal repeat completes the blade of the first repeat. Residues on the propeller top surface likely coordinate interactions with other proteins or ligands.