



Figure 2. Structure of BPTF PHD finger bound to H3K4me3-containing peptide. (A) 2.0-Å crystal structure of the complex of the BPTF PHD finger bound to H3(1-15)K4me3 peptide (PDB: 2F6J). The PHD finger (as part of a PHD finger-bromo cassette) in a ribbon representation is in green, with two stabilizing bound Zn ions in silver balls. The bound peptide from A1 to T6 is shown in yellow with the trimethyl group of Kme3 shown by dotted balls in magenta. The residues forming the aromatic-lined cage are colored in orange. (B) Details showing the antiparallel alignment of the β -strands of the bound H3K4me3-containing peptide and PHD finger, resulting in formation of an antiparallel β -pleated sheet on complex formation. Note that the positively charged amino terminus is anchored in its own pocket. (C) Positioning of the K4me3 group within the aromatic-lined cage in the complex. (D) Positioning of R2 and K4me3 side chains in adjacent open surface pockets (surface groove mode), separated by the indole ring of an invariant Trp in the complex. The PHD finger and peptide are shown in surface- and space-filling representations, respectively. (E) Positioning of the K4me2 group into an engineered pocket, containing a Glu residue replacing the Tyr residue in C (PDB: 2RIJ).