



Figure 7. Structures of the de novo Dnmt3a-Dnmt3L complex. (A) Domain architecture of Dnmt3a, 3b, and 3L. (B) A nucleosome is shown docked to a Dnmt3L-3a-3a-3L tetramer (Dnmt3a is colored in green and Dnmt3L in gray; PDB 2QRV). (Adapted from Cheng and Blumenthal 2008). The position of the histone H3 amino-terminal tail (purple) bound to Dnmt3L is shown, taken from a cocrystal structure (PDB 2PVC). By wrapping the Dnmt3a/3L tetramer around the nucleosome, the two Dnmt3L molecules are able to bind both histone tails emanating from one nucleosome. The ~10 bp periodicity of binding to the major DNA groove is indicated by red circles. (C) Structure of the Dnmt3a ADD domain (PDB 3A1B) possibly interacting with histone tails from neighboring nucleosomes. (D) Structure of the Dnmt3a PWWP domain (PDB 3L1R).