Synthesis of the Ligands:

1. **Synthesis of dap(AH)₂**: The bis-schiff base [dap(AH)₂] was obtained by refluxing 2,6-diacetylpyridine with anthraniloyl hydrazide in 1:2 molar proportion in alcohol for 4h. The light yellow schiff base separated during the reflux was washed with alcohol and dried over fused calcium chloride. Yield 85%, M.P: 210°C (melts with decomposition); Selected IR bands (cm⁻¹): 3517w [ν\text{a}NH(NH₂)], 3459ms [ν\text{s}NH(NH₂)], 3353s (ν\text{NH} of amide) 1658s [ν\text{CO} amide I], 1536s [amide II]. Anal for C₂₃H₂₃N₇O₂: Calcd.(%), C,64.34; H, 5.36; N, 22.84. Found (%), C, 64.62; H, 5.52; N 23.01.

2. **Synthesis of dap(InH)₂**: This bis-Schiff base was prepared by refluxing 2,6-diacetylpyridine (0.815 g, 5 mmol) and isonicotinic acid hydrazide (2.74 g, 10 mmol) dissolved in methanol (100 ml) for 2 h. The white solid obtained was filtered and thoroughly washed with methanol (5 ml × 3) followed by diethyl ether (10 ml × 2). Yield 85%. The ligand was recrystallised from a hot methanolic solution. Selected IR bands (cm⁻¹): 3186w [ν\text{NH} (amide)], 1666s [ν\text{CO}(amide I)], 1540s [amide II]. Anal for C₂₁H₁₉N₇O₂: Calcd.(%), C,62.84; H, 4.74; N, 24.44. Found (%), C, 62.82; H, 4.76; N 24.45.
Supplementary Figure 1. View of the double helical structure of $[\text{Mn(dap(A)$_2$)}]_n$.
**Supplementary Figure 2.** Bifurcated hydrogen bonding by DMF connecting two asymmetric unit of \([\text{Zn(dap(A)}_2)]_2\) (2). 2.25 DMF