A novel hybrid phosphite was synthesized using 1,4- diaminobutane (dabn) as structure-directing agent using slow evaporation method. Single crystal X-ray diffraction analysis shows that it crystallizes in the triclinic system (S.G: P-1). The crystal structure is built up from corner sharing [CoO₆] octahedrons running in a form of chain along [001], interconnected by H₂PO₃ pseudo-pyramid units. The diprotonated organic molecule residing between the parallel chains, interacts with the inorganic moiety via hydrogen bonds leading thus to the formation of a three dimensional network. The biological tests exhibit significant activity against \textit{C. albicans} and \textit{E. coli} strains in all used concentrations while less activity was pronounced when tested against \textit{S. epidermidis}, \textit{S. cerevisiae} whilst there was no activity against the nematode model \textit{S. feltiae}. 

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