Insights into the Nop7 and Erb1 interaction, essential for the assembly of PeBoW complex in ribosome biogenesis.

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Ribosome biogenesis is one of the most essential pathways in eukaryotes in which numerous groups of proteins participate. One of these complexes is the PeBoW complex (in mammals) or Nop7-subcomplex (in yeast). The mammalian PeBoW complex, composed of Pes1, Bop1 and WDR12 (Nop7, Erb1 and Ytm1 in yeast) is critical for the processing of the 32S pre-ribosomal RNA. Several studies were carried out to characterize the interactions between these proteins. Erb1 is considered to be the core of the complex due to the fact that it physically interacts with both, Nop7 and Ytm1. We have previously described the interaction between Erb1 and Ytm1 through their β-propellers domains (Wegrecki *et al*, 2015). However, the association between Nop7 and Erb1 is not clear yet. In this work, the heterodimer formed by Nop7 and Erb1 both from *Chaetomium thermophilum* and *Saccharomyces cerevisiae* were expressed at large-scale in *E. coli* (DE3) BL21 CodonPlus (RIPL) and purified using affinity and size exclusion chromatography (gel filtration). Bio-layer Interferometry experiments were used to calculate the binding affinity (K_D values) for the interaction between Nop7 and Erb1. Moreover, it has been possible to purify the complex by gel filtration. Our data suggest that the N-terminal domains both from Nop7 and Erb1 are required for the binding and heterodimer complex formation.