



**Figure S1. Comparison of RNA-binding ability of RNase II wt and E542A mutant.**

A. 10,000 cpms of polyA 35 nt were incubated under the conditions described above. The enzyme concentrations used are indicated in the Figure. A control reaction without enzyme added was performed (C).

***Electrophoretic Mobility Shift Assay (EMSA).***

EMSAs were performed with a poly(A) chain of 35nt RNA oligomer as described previously (1, 2). Briefly, the substrate was labelled at there 5'-end using [ $\gamma$ -32ATP] and T4 polynucleotide kinase. The substrate was then purified with Microcon YM-3 Centrifugal Filter Devices (Millipore) to remove the non-incorporated nucleotides. Binding reactions were performed in 10  $\mu$ l of volume containing 20 mM Tris-HCl pH8, 100 mM KCl, 1 mM DTT, 0.5  $\mu$ g/ $\mu$ l BSA and 10 mM EDTA, 1 fmol of substrate and increasing concentration of enzyme. Mixtures containing increasing concentration of each enzyme were incubated for 10 min at 37 °C and then subjected to UV crosslinking - 600 mJ, 10 min, 254 nm at 4 °C. The samples were analyzed in a 10% non-denaturing polyacrylamide gel, and the RNA-protein complexes were detected by using the phosphorImager system from Molecular Dynamics

**References:**

- Amblar, M., Barbas, A., Gomez-Puertas, P., and Arraiano, C. M. (2007) *RNA* **13**(3), 317-327
- Arraiano, C. M., Barbas, A. and Amblar, M. (2008) *Methods in Enzymology* **447**, 131-160