

# ENHANCING SMALL MOLECULE BINDING TO RNA WITH DYNAMIC COMBINATORIAL CHEMISTRY

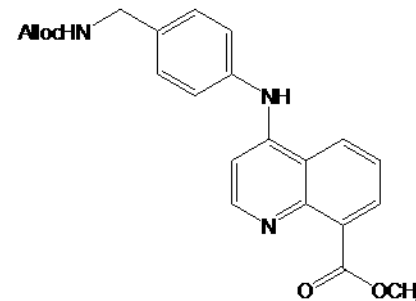


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# BACKGROUND AND GOALS



## ○ Background

- *Intercalator* –
  - A graduate student in my lab had been working with a previously discovered molecule which intercalates (inserts itself between base pairs) of a specific strand RNA
  - I attached it to four amino acids including cysteine
- *Dynamic combinatorial chemistry* –
  - Interchangeable bonds are formed between small compounds.
  - Favored combinations are amplified
- *Libraries* –
  - Contain three amino acids including cysteine (which forms disulfide bonds, allowing it to participate in DCC)
  - Based on the charged amino acids arginine and lysine

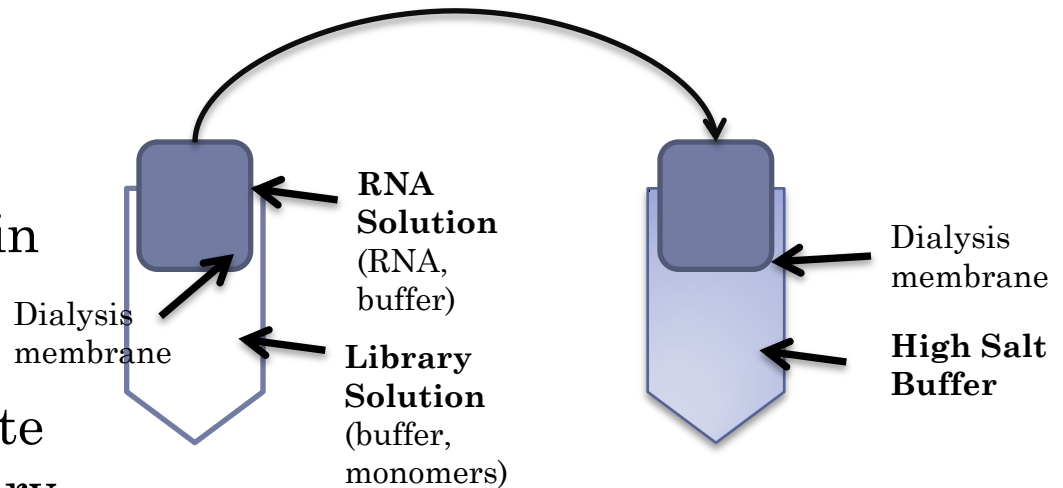
## ○ Goals

- To determine which combination of compounds (the intercalator peptide and the library components) will bind with the most strength and specificity using DCC.



# RESULTS

- RNA began degrading in the solution, so a dialysis method was used in order to separate the DNA from the library.



- The buffers used in the experiment had salt concentrations too high for analyzation, so multiple methods of purification were tested.
- From the initial data, it appears that dimethyl arginine was always involved in binding, but this result was not confirmed by supporting experiments.

