In *E. coli* nickel regulation is controlled by two metalloregulators, one for import NikR and one for export RcnR. NikR is a 60 kDa homotetramer responsible for the repression of the Ni importer NikABCDE. RcnR is a 40 kDa tetramer responsible for derepression of the Ni and Co exporter RcnA. RcnR binds to Ni and Co, resulting in the unbinding of DNA and the expression of RcnA, the exporter of Ni and Co in the cell. RcnR and CsoR form a new structural class of metalloregulators. Very little is known about how RcnR and NikR are able to differentiate between metals. Our work focuses on understanding the role of coordination geometry and ligand selection in a variety of metal substituted wild-type NikR and RcnR proteins. We have new data that provides some insight into how RcnR is able to differentiate between the various transition metals.

![Figure 1. Divalent metal induction of P_{rcnA} expression.](image)