

Identifying the RNA Binding Sites on the MeCP2 Protein by Regional Deletion



Ishita Mohan

The following is an excerpt from a longer piece. For the full text, please visit https://scholar.colorado.edu/concern/undergraduate_honors_theses/mw22v689v or scan the QR code.

Abstract

Long non-coding RNAs (LncRNAs) have been found to bind to the Methyl-CpG binding protein (MeCP2), which has been speculated to play a role in altering chromatin structure and regulating gene expression. Whether MeCP2 has other important functions related to RNA processing, the nature of the LncRNA-MeCP2 interaction and function, and how this may affect brain development is unknown. The goal of my project is to provide insight into important regions or domains of the MeCP2 protein involved in RNA binding. With this new information, a foundation for further in-depth research will be established, on the involvement of the MeCP2 protein in the pathogenesis of Rett Syndrome, through RNA binding and RNA regulation.

Redesigning Peppers RNA Imaging System: An Investigation of In Vivo and In Vitro Performance



Caitlyn Mendik

The following is an excerpt from a longer piece. For the full text, please visit https://scholar.colorado.edu/concern/undergraduate_honors_theses/ms35tb04h or scan the QR code.

Abstract

RNA is a central component of biochemistry as it carries genetic information, has enzymatic activity, mediates protein biodiversity, and supports other cellular functions. Scientists are continually developing new tools for studying RNA and applying it to fields of research such as medicine and molecular biology. RNA imaging provides one avenue for characterizing RNA by looking at trafficking, localization, and lifetime in living cells. Imaging tools have been on the rise in the past 20 years, providing innovative methods for looking at this