

Most current drugs and therapeutics covalently engage with and target proteins. As described by the Central Dogma of Biology, DNA (deoxyribonucleic acid) in the nucleus of a cell is transcribed into RNA (ribonucleic acid) which then serves as a messenger molecule for protein synthesis. However, while ~70% of the mammalian genome is transcribed into RNA, less than 2% is protein-coding. This non-coding RNA contributes to additional cellular functions. Thus, RNA is a desirable target for therapeutics as it is transcribed from a larger part of the genome than what is translated into proteins and may serve as a regulator for cellular mechanisms or be related to particular disease states. Using an RNA probing technology invented in the Weeks laboratory and chloroacetamide compounds, we located binding locations in RNA that could be used as targets for future therapeutics. Through Gel-dye assays, we observed RNA binding for 3 chloroacetamide compounds. Additionally, through a novel technology developed by the Weeks lab and DNA sequencing, we screened human total RNA for specific binding sites for chloroacetamide 28.