NEW MEXICO WATER RESOURCES RESEARCH INSTITUTE

# Cost-efficient detection of endocrine-disrupting compounds in drinking water


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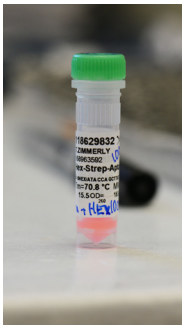
## Purpose of Study

The potential for contamination of New Mexico's drinking water supplies has increased as we rely more heavily on surface water resources to meet increasing demands. Endocrine-disrupting compounds (EDCs) are a class of contaminants that are known to be widespread in urban drinking water. This study will use a DNA aptamer (short biological polymer) to develop a method to cheaply and quickly sense one of the most common EDCs.

## Study Underway

Several different functionalized aptamers will be purchased and used in this study. A wide variety of sensing platforms employing aptamers have been studied and this project will build upon existing methods for aptamer microarray construction to build and test a reusable, sensitive, low-cost sensor for BPAs (bisphenol-A), which are known to have significant detrimental impacts on mammalian health and development at concentrations as low as several parts per billion.



*This picture is a tube of the fluorescently-labeled aptamer itself, this particular one being with the red fluorophore HEX.*

## Benefits

The low-cost sensor for BPA could be used on-site at water treatment facilities with little expertise. If this sensor proves to be effective, it will be used to determine the concentration of BPA in samples of water from the Rio Grande and drinking water derived from it.


*This is the instrument used to measure the fluorescence of the aptamer before and after BPA binding. The change in fluoresence will be correlated to BPA concentration.*

*Max Baymiller is in the lab, pouring an aliquot of Tris-EDTA DNA-preserving buffer to be used in aptamer binding experiments.*