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*Persnickety Paramecium: Using P. caudatum as a Biosensor for Estrogen*

What's in the water? Water quality and testing continues to be at the top of health and environmental concerns. Studies show that there is a presence of estrogenic chemicals in water. However, the major drawback to detecting harmful materials in the water is the overwhelming expense. Perhaps, we are overlooking a simple, inexpensive way to test our water. Could we use a microorganism; like paramecium, to detect estrogen in our water supply? *P. caudatum* will show a chemoresponse to estrogen and to distilled water heated in the presence of plastics. Thus, validating its usage as a water quality biosensor. *P. caudatum* were put into the center of a T-maze. One end being filled with the control solution and the other with the test solution. The tubes were then connected together and allowed to set for 30 minutes. At the conclusion of the 30 minutes the tubes were detached. Each side of the tube was individually counted for *P. caudatum*. The *P. caudatum* showed a chemoattraction towards Styrofoam, plastic water and the higher levels of estrogen. However, the *P. caudatum* showed a chemorepletion to the lowest level of estrogen (10ng). It was found that *P. caudatum* can be used a biosensor for estrogen and estrogen mimicking compounds. Therefore the hypothesis was supported.