

## Protocol

**\*You should have received and read an introduction to the immunology behind the home pregnancy test. Please refer to that document as you perform today's tests.**

**You will be expected to explain the results of your test using the one of the urine samples as well as the results from your classmates' tests, so make sure you observe all brands and samples tested today.**

We will use 4 different boxes of pregnancy tests, each having 2 tests. In some cases the tests in the box are identical, but apparently it's common to include tests with slightly different outputs in one box. The tests ranged from about 8 dollars to 18 dollars and I saw tests that cost more than 25 dollars on the shelf. Each test uses slightly different methods of detecting hCG from urine. Obtain one of the pregnancy tests and read the directions for use from beginning to end. It may be efficient for one person at each table to read aloud, while the rest take notes.

1. Each pair of students at one table should test either sample 1 or sample 2.
2. Use the test as directed, except for dipping the absorbent end into the tube, or dropping urine on it with a pipette, and wait for the suggested length of time, (rather than holding it in a stream of urine).
3. Allow the test to run for the recommended time and decide whether your sample came from a pregnant woman or not.
4. Share your results with other classmates and come to a consensus on the samples.

## Understanding the results.

1. Why are these tests called lateral flow tests? What is the purpose of having the urine slowly progress down the length of the strip? Why is the viewing area sealed?
2. Why do the indicator areas look so uniform? (straight lines/plus signs.)
3. Describe several possible immunological explanations for the results of your test and that of your tablemates. Be as specific as possible.
4. What is the purpose of the control window/line? BE SPECIFIC
5. Describe how a control might have worked in your specific test. Propose a situation in which the control indicated you should not trust the results of the test.
6. Clearly the tests used today require very specific antibodies. Spend some time discussing the nature of antibodies and the technology used for generating antibodies of choice for applications such as those done today. Recall the review viewed for the FACS analysis lab.

**To include in your lab book:**

1. Explain how pregnancy itself is incredibly interesting from an immunological standpoint. Using the paper given out in lab, briefly explain at least 2 main ways in which moms remain tolerant to the fetus they harbor in their uterus.

2. Obtain one additional full length research paper on the topic of pregnancy and maternal tolerance. Summarize the paper in one paragraph.

Cite your reference (s). Use a reference from a scientific journal, not just on-line postings of information. Include in your reference: Title of the article, authors of the article, Journal in which the article was published, volume, date and page numbers of the article you read.