At-home Healthcare Diagnostics

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CURRENT RESEARCH

Putting healthcare in the hands of the individual

Imagine waking up with a sore throat and an ache throughout your body. A quick search of WebMD says you probably have either a cold or the flu. You feel you should find out what's going on but a trip to the doctor is impossible given your busy day.

Wouldn't it be nice to have an at-home device that would allow you to swab your cheek and diagnose the problem yourself?

That is exactly what the researchers in Dr. Andrew Ellington's lab at the University of Texas at Austin are developing. The Ellington Lab specializes in, among other things, a field known as point-of-care diagnostics. In contrast to traditional tests like MRIs and biopsies, point-of-care diagnostics can deviate from the hospital-laboratory pipeline and bring the test to the patient, preferably at a low-cost, requiring only minimally invasive procedures, and providing results in less than a few hours. Successes has already been found in lower income country and military field hospitals as well as in commercial markets, as epitomized by the home pregnancy test. Specifically, the Ellington Lab has developed and is currently optimizing a relatively versatile nucleic acid reaction that first detects a disease (e.g. flu, malaria, etc.) or other health marker in a human sample (e.g. spit) and then reports it via a fluorescent signal. A variety of handheld devices (such as the ubiquitous smartphone or glucometers or pregnancy test kits) already exist; the key idea is to develop a simple, almost free adaptor that can transduce almost any disease or health marker into these readers. The Ellington lab has begun to develop such a transducer that can be reconfigured at will. Imagine determining that you have the flu... through a...

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AFFILIATION

The University of Texas at Austin

EDUCATION

- Ph.D., in Chemistry, 1988 , Harvard University

AWARDS

- American Academy of Microbiology
- National Academy of Sciences
- President
- American Association for the Advancement of Science
- International Society for Nanoscale Science, Computation and Engineering
- and 1 more...

RESEARCH AREAS

Health & Wellness, Longevity, Immortality Research

FUNDING REQUEST

Contributions to Dr. Ellington will help ensure a prototype point-of-care transducer within the year. It will also help with the production of transducers that will be distributed to individuals for testing and eventually brought to market.