



University of Brighton



**FakeMed
Sensor**

**Portable electrochemical device for
detecting falsified and substandard
medicines**



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MEDICRIME COMMITTEE -10TH PLENARY MEETING

9-10 December 2025

Problem



**1 million deaths
caused by fake
medication a year**



**World Health
Organization**



**Counterfeit, falsified, and
unregistered veterinary
medicines is estimated at
USD 1–2 billion per year**

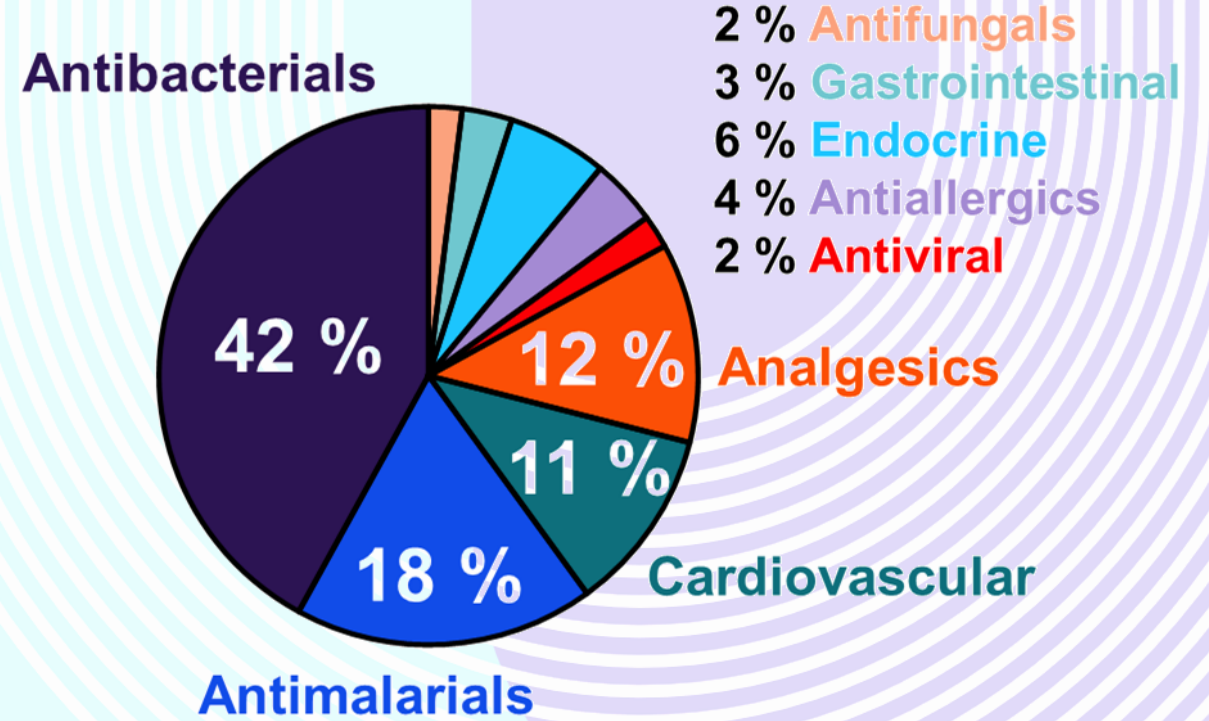
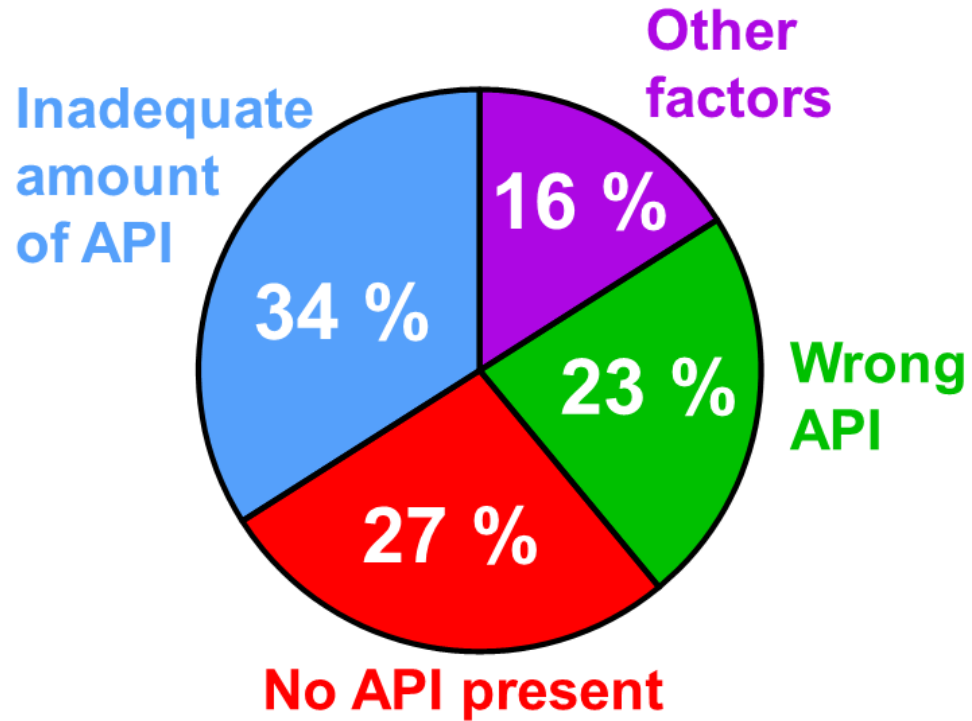


**The UNODC previously
estimated that 316
million people used illicit
drugs in 2023**



**United Nations
Office on Drugs and Crime**

The global crisis of fake medicines



GPHF-Minilab™

- 1000 units distributed in 95 countries
- Published studies have shown that results were user-dependent, underlying the importance of regular good quality training and proficiency testing.
- In a recent study in China, in which 77 antimicrobial samples were substandard, most being above the 80% API levels the Minilab had 0 % sensitivity

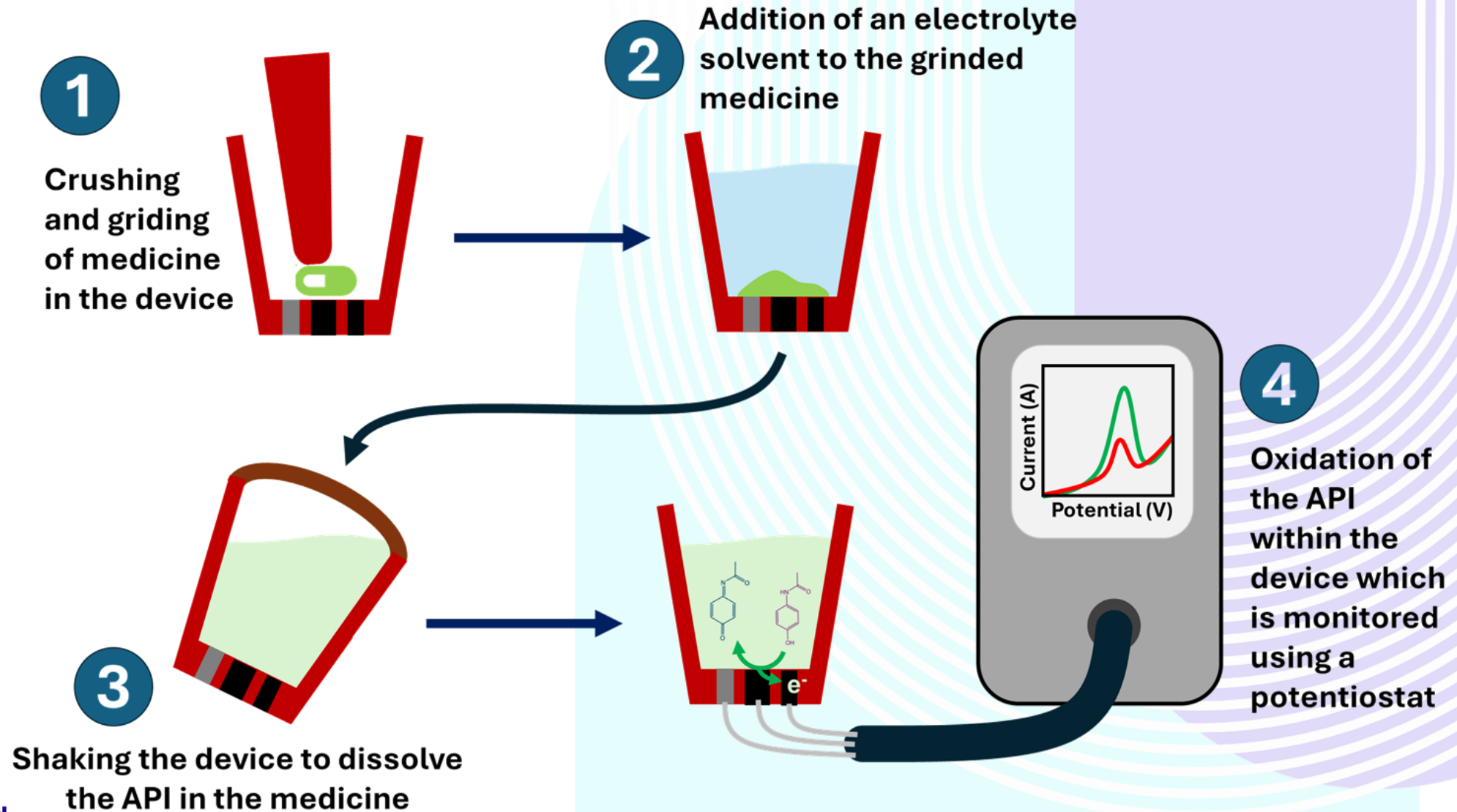
Pan, H. and W. Ba-Thein, The American Journal of Tropical Medicine and Hygiene, 2018. **98**(1): p. 344-348.



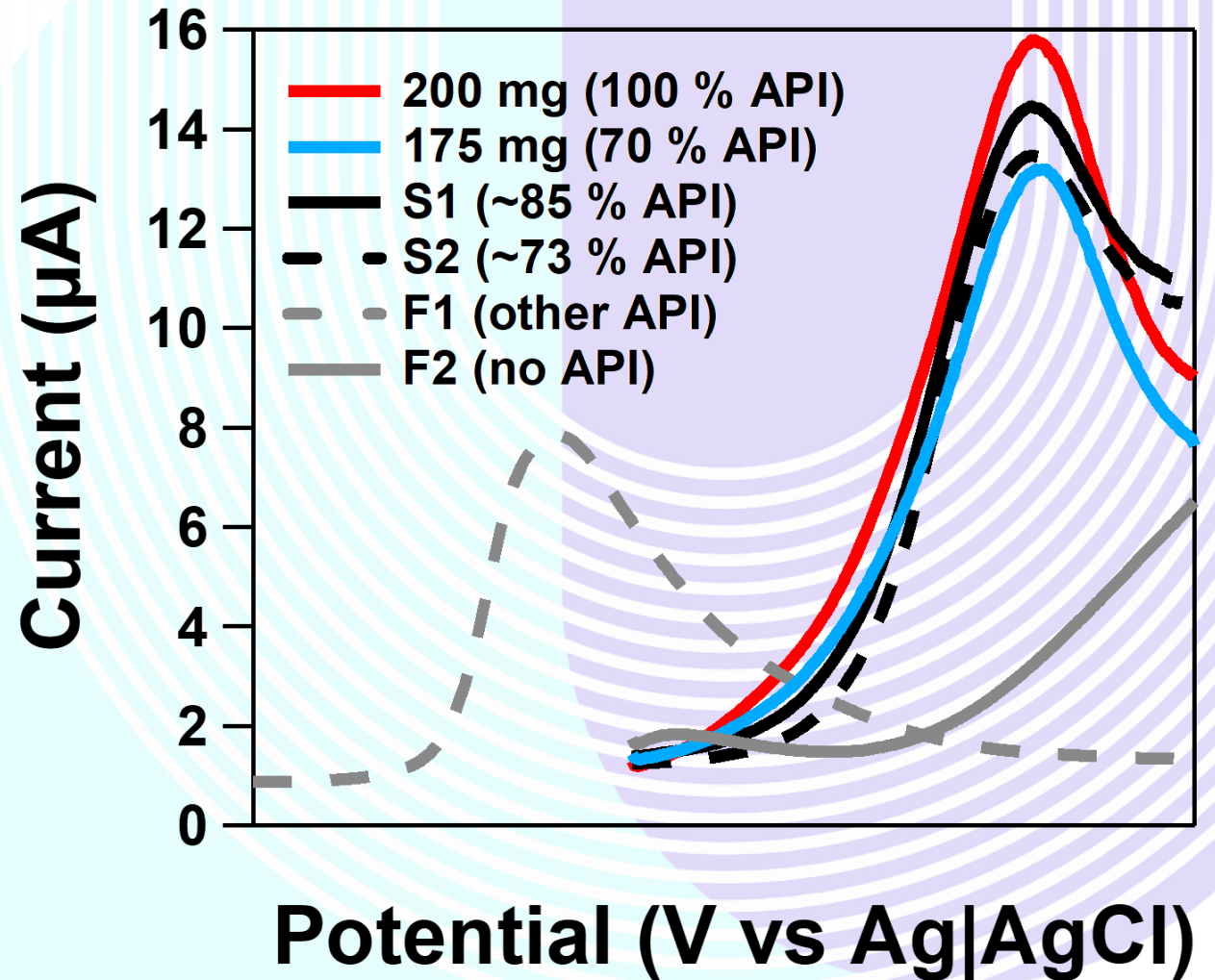
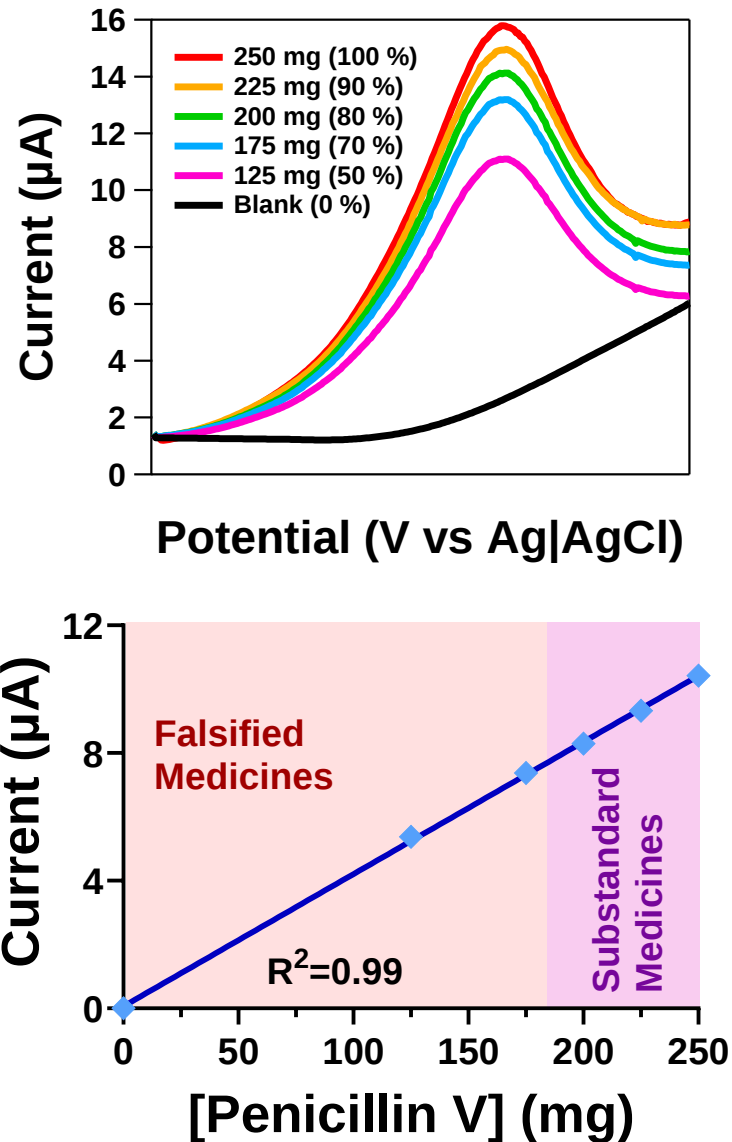
Our research goals

- Develop a simple measurement device capable for field operation
- Ensure the measurement device has the capability to determine substandard and falsified medicines
- Ensure accessibility to allow for wide scale surveillance of medicines throughout the supply chain

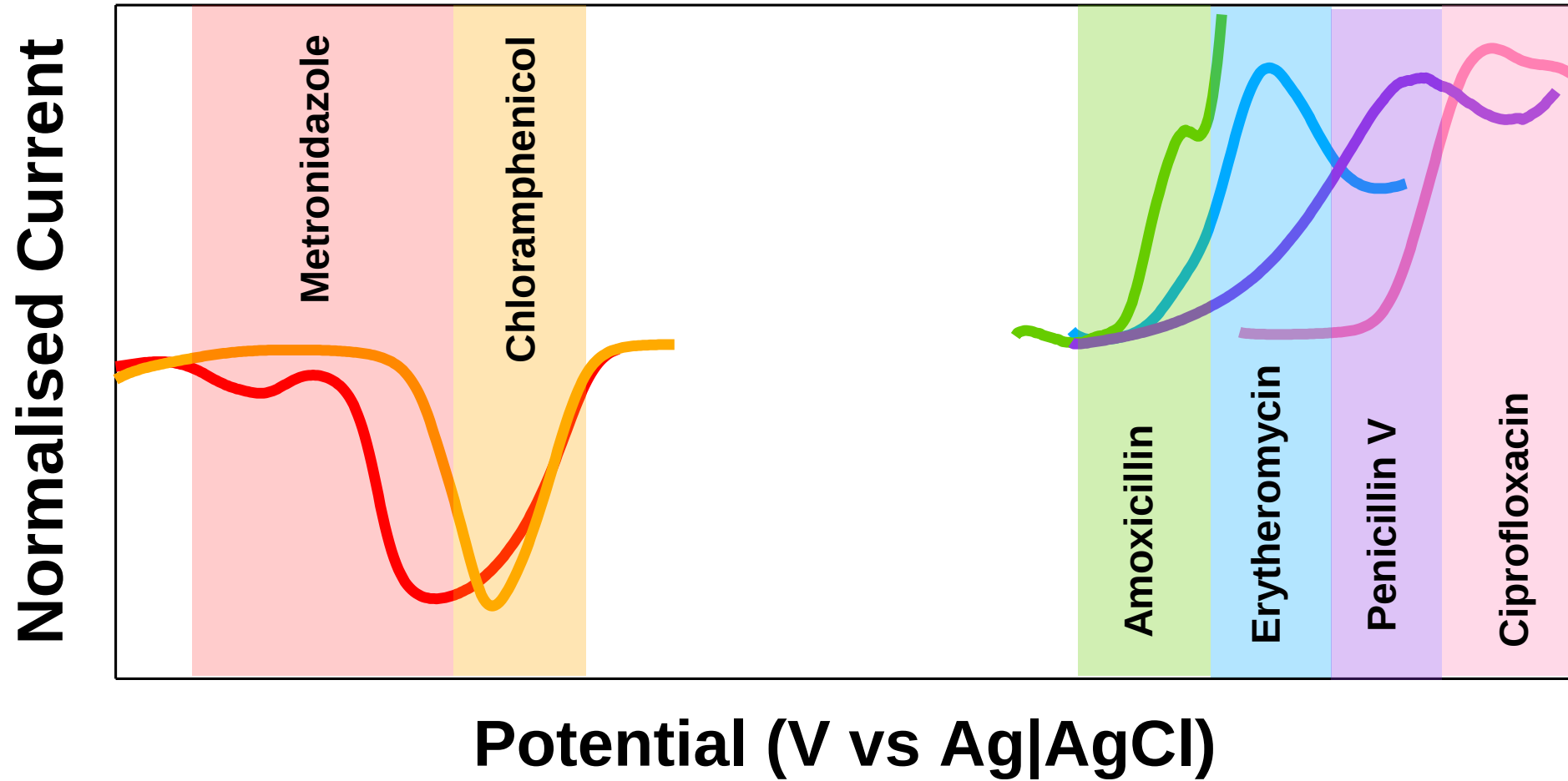
Introducing the FakeMedSensor



Quantitative determination of API



Qualitative determination of API



What we have developed protocols for

- Malaria tablets
 - Chloroquine / Quinine
 - Malarone (atovaquone / proguanil)
- Cardiovascular drugs
 - Clopidogrel
 - Hypotensive drugs (dopamine, dobutamine, adrenaline)
- Antibiotics
- Vitamins / supplements
 - Multivitamins, Vitamin C / B complex
 - Viagra (Sildenafil)

Future direction

- Broaden the range of medicines that our device can monitor
- Conduct field studies to investigate the sensitivity of our approach
- Enhance our second prototype through development of hardware and software to reduce unit cost and provide the scope for wide scale field surveillance



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Thank you for listening



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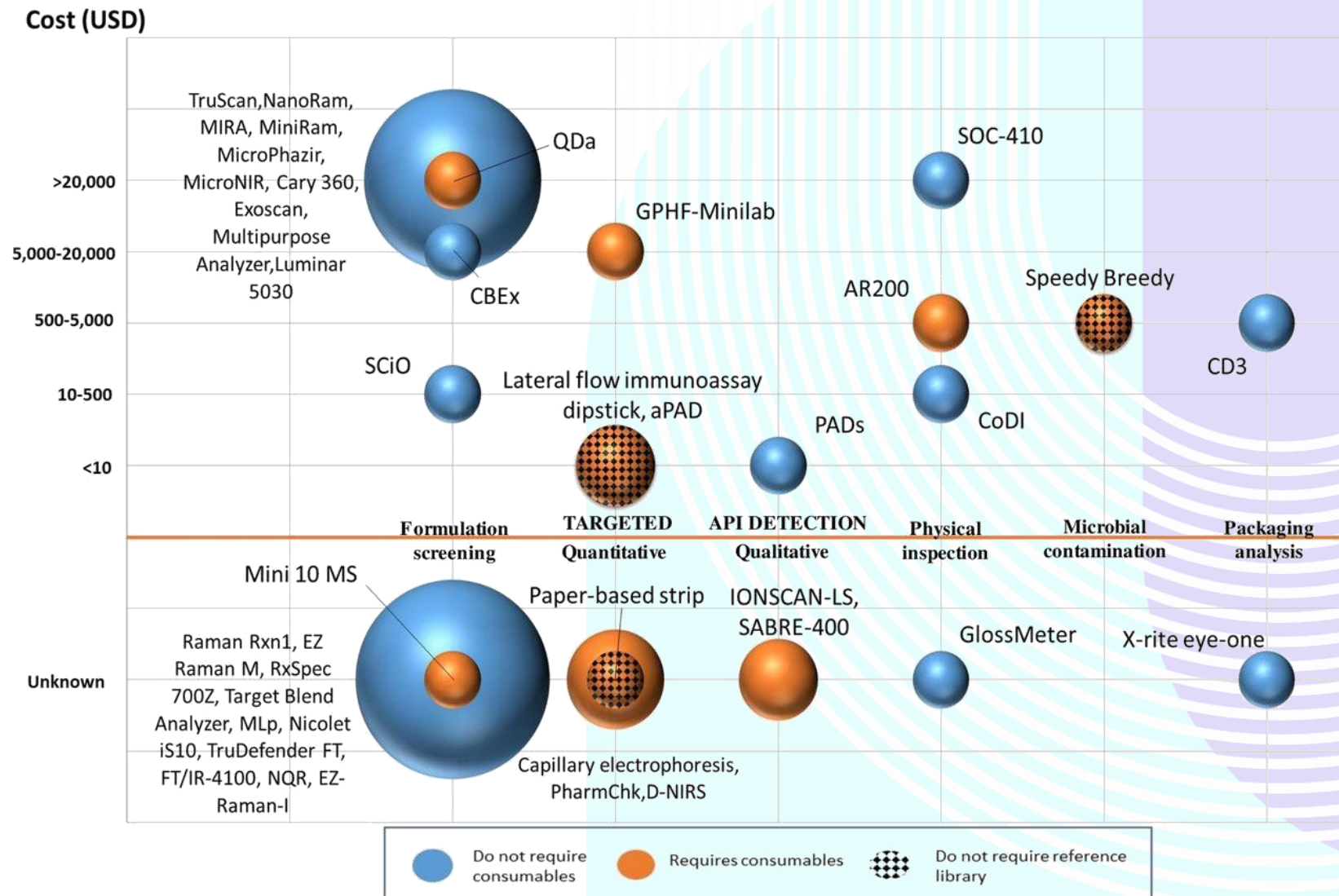
FakeMedSensor.com



Looking for partners, testers, and advisors



Current detection technologies



Serena, V., et al., Field detection devices for screening the quality of medicines: a systematic review. *BMJ Global Health*, 2018. 3(4): p. e000725.

NB : aPADs are paper analytical devices able to semi-quantitate an API whereas the PADs are designed to qualitatively screen for the absence or presence of some APIs and excipients

How does electrochemistry work?

Working Electrode

