

INNOVATING CROSS-DOMAIN SOLUTIONS TO DETECT EMERGING BIOLOGICAL THREATS

Leveraging Faid For Biological Sample Analysis

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After more than 3 years of DTRA funding we have a functioning low SWaP portable system for rapid analysis of liquids, aerosols, and solids for the identification of the presence of fentanyl analogs (both known and unknown). Work has recently begun to use this base technology to tackle other challenges that may be found in the field. This work includes an internally funded R&D effort to develop methods to leverage this technology to enable post-exposure detection. To achieve this in the field, we are working to develop a FAID-system compatible swipe that is modified to enable extraction of metabolites from biological samples and rapid analysis (<10min) in the field. This extraction and analysis process is designed to have no cold-chain requirements and minimal consumables (swipes and sample chambers). The current development includes development and testing of FAID compatible swipes that are functionalized to both modify the sample pH and are coated with a sorptive material to amplify metabolite extraction. The initial demonstration will focus on known metabolites of fentanyl to minimize system modification. This initial data and performance will be presented.

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