*Nano-intelligent Detection Systems*

# *Handheld Assays & Microarrays for Biological Agent Detection, Disease Diagnosis, and High Throughput Screening*

## ADVANTAGES

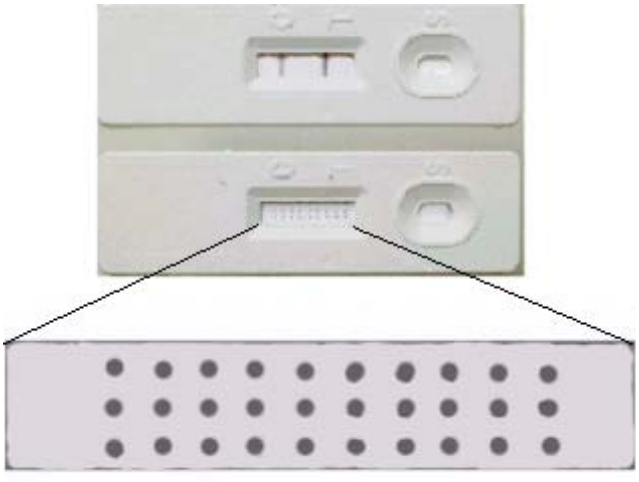
- Enhances the sensitivity of existing antibody based assays up to 100 fold with 5 fold less reagents
- Substantial reduction of false positive readings
- Enables effective use of extremely small amounts of reagent(s)
- Easy assay multiplexing and high throughput target screening (including proteomics)
- Improved lot-to-lot reproducibility
- Simple formulation and production processing

## Example Biological Agents

- *B*. anthracis bacterial spores
- *Y*. pestis bacteria
- Botulinum toxin
- Smallpox

Handheld immunochromatographic assays offer many unique advantages over their bulky instrument-based counterparts: they are compact, easy to use, and have no power source requirements. Simple sample preparation and data interpretation have made them a preferred tool over gene-based assays for rapid field detection and point–of-care applications such as home pregnancy tests and cardiac marker detection. Due to the difficulty in controlling protein binding events at the nanoscale, protein-based assays often exhibit low sensitivity and unacceptably high false positive responses. ANP Tech's team has recently developed dramatically improved handheld assay (HHA) and microarray (HHMA) devices that can reliably detect the presence of biological agents at extremely low concentrations.

The new devices have been engineered with ANP Tech's unique nanomanipulation technology. This approach enhances assay sensitivity up to 100 fold, while virtually eliminating false positive readings verses analogous conventional protein-based assays. Our products significantly outperformed others at the latest DoD-sponsored Joint Field Trial. In addition, our technology allows the use of very small sample volumes, with no need for elaborate preparatory steps. Our system has been successfully demonstrated for a variety of biological threat agents, including *B*. anthracis bacterial spores, *Y*. pestis bacteria, smallpox virus, as well as ricin and botulinum toxins. ANP Tech's new protein microarray design also allows for the simultaneous detection of multiple biological agents, and has great promise for proteomics-related applications, such as high throughput protein target discovery and drug lead screening.



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