



## ACTIVEcapture™ Sampling & Sample Preparation

Bacteria and viruses are a serious healthcare, agriculture and household problem. RECEPTORS' SMART MATERIALS™ address the critical area of microbe contamination and infection control with our sampling and sample preparation products for detection and diagnostics.

There are three pieces that must come together to produce a successful diagnostic system. These three components are:

**SAMPLE PREPARATION** - Any raw sample, from urine or blood in the clinic to chicken breasts, carrots or wheat flour in the supermarket, has to be processed for presentation to the actual analysis device or test.

**SIGNAL SYSTEM** - Next, the processed sample must be subjected to some form of sensing or signaling reaction that will give a proportional signal that is representative of the analyte (eg. influenza virus in nasal discharge, glucose in blood, salmonella in eggs).

**READ-OUT** - The signal must then be presented to the user/customer as meaningful information. For example, it would display the plus or minus sign on a home pregnancy test, identify the influenza strain from a lab based instrument, culture or PCR for microbe contamination, etc.

In summary, it takes the combination of these three pieces to produce a successful diagnostic product. **However, sample preparation is commonly the “Achilles Heel” of any diagnostic system or product.**

The utility of a sample preparation method is based on its ability to concentrate and purify the analyte of interest. The generic methods are limited. They frequently require significant hands-on time to overcome their poor specificity toward purification. In addition, the analyte of interest is frequently diluted, not concentrated. On the other end of the spectrum, the analyte specific methods, which are usually based on highly specific capture agents like antibodies, are limited by cost, stability and too narrow specificity. This leaves a significant gap. RECEPTORS' CARA™ technology fills that gap.

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