



# International Conference & Exhibition on Analytical and Bioanalytical Techniques 2010

ANANBIOANAL - 2010

Pharmaceutical R & D Summit

doi:10.4172/2155-9872.1000090

## Bioanalytical Techniques to Detect Traces of Pesticides and Toxins in the Foods and Environmental Samples

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Food and environmental safety is a prime concern of modern human society. The economy of India is mainly depending on agriculture. The green revolution achieved in India has been possible only because of the effective management of land and water resources along with inputs like fertilizers and pesticides. The increasing use of pesticides/herbicides/insecticides in recent years for achieving higher agricultural yields has posed considerable problems in general health programs. These organic toxins enter animals and human beings directly as well as indirectly through the food chain or drinking water. The high toxicity of organophosphorus neurotoxins and their large use in modern agriculture practices has generated public concerns. Short duration exposure of these pesticides can potentially create health hazards. Thus, there is a need for the detection of these pesticides at high sensitive level with fast, reliable and economically feasible analytical technique. Biosensor is an alternative tool to detect the pesticide at sensitive level with rapidly and cost effectiveness. There is also a need to develop a simple dipstick technique having field applicability and rapidity for the detection of food toxins like pesticides. Following useful systems have been developed at CFTRI for the detection of pesticides and food borne pathogens/toxins.

1. Biosensor based sensitive detection techniques.
2. Application of nanoparticles for bioanalytical applications.