A highly sensitive SPR detection of Ricinus communis toxins

Ricinus communis toxins are highly poisonous proteins once used illegally in the past. Against such bioterrorisms using toxins and pathogenic microbes in the form of the "white powders", we have to be prepared with facile detection and medical treatment methods. Recently, we developed an SPR (surface plasmon resonance) detection system applying synthetic carbohydrates as the toxin probes, which allows us a facile and highly sensitive detection within 10 min even at protein concentration of less than 1/10,000 of LD_{50} value. The present analytical method may offer one of the highly effective methods against the bioterrorism.

a carbohydrate ligand substrate a carbohydrate ligand substrate data processor

Figure: Detection principle of our present method.

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