PATENT

BIOSENSOR FOR EARLY AND ACCURATE DETECTION OF PSEUDOMONAS AERUGINOSA

The Need

Development of new sensors addressing the challenge of the present diagnostic techniques with higher specificity and sensitivity, and shorter time.

The Solution

A detection nano-system which develops a porous material loaded with an indicator molecule of diagnostic, and equipped with a molecular gate for the controlled delivery of the cargo when opened by the presence of a given external estímulus.

Innovative Aspects

Specificity, rapidity and sensitivity.

The system specifically differentiates *P. aeruginosa* from other *Pseudomonas,* such as *P. fluorescens* and *P.putida; as well as* from bacteria and fungi causing nosocomial infections, such as *C. albicans, S. aureus, E. coli* and *K. pneumoniae*.

Its high specificity allows this differentiation to be carried out in less than 30 minutes.

Very high sensitivity, with a detection limit (10 CFU/mL or 0.1 ng/µL of genomic DNA) lower than present diagnostic techniques.

Its sensitivity allows the detection of *P. aeruginosa* even at the beginning of the infection process, while most of the present methods do at late stages.

It is commercially very competitive due to its simplicity and low cost.

It does not require specialised personnel.

It is considered highly possible that the clinical analysis can be carried out in outpatient consultation.

Stage of Development: Analytical validation

Intellectual Property

Spanish patent application (Priority date: September 2, 2024)

Suitable for international extension (PCT application)

Available for:

- **Licensing**
- **Further development**

Contact details

fsantos@ciber-bbn.es

www.ciber-bbn.es