

Partnership and/or Licensing Opportunities

INNOVATIVE DIAGNOSTIC TOOLS FOR NUCLEIC ACID DETECTION BASED ON ULTRASENSITIVE POLYTHIOL PROBES

Despite considerable advances over the last years in diagnostic, innovative diagnostic system allowing a sensitive, specific, fast and multiplex detection of nucleic acids are still needed. In this context, the development of new diagnostic technologies with high performances appears to be a challenge. The EFS TransDiag Laboratory developed innovative diagnostic tool with very high performances dedicated to rapid analysis of genomes.

Invention:

Development of diagnostic tools based on **polythiols probes** for the **specific and ultrasensitive detection of nucleic acid present** in a biological sample. This invention is the result of the work of the TransDiag Laboratory of EFS located in Montpellier in partnership with CNRS and Montpellier University. This technology is patented.

Keywords:

Innovative diagnostic, polythiol probes, genotyping or screening, optical or electrochemical detection (Enzyme-Linked OligoSorbent Assay ELOSA, sensors...).

Description:

Development of **robust polythiol probes** which can be **efficiently immobilized in a stable way on :**

- **Maleimide-activated microplates** (ELOSA)
- **Electrodes (gold, diamond.....)**
- **Magnetic/micro/nanoparticles**

These formats are compatible with both optical and electrochemical detection. These innovative molecular tools **increased strongly the performances** of analytical systems.

Advantages:

- **Robust molecular tool** can be integrated in any kind of diagnostic platforms (optical and electrochemical) depending on targeted needs
- **Targets:** detection of short/ long synthetic or natural amplified sequences
- **Ultrasensitive detection:** 10 pM for optical detection and 10 fM for electrochemical detection
- **High specificity:** DNA screening or sequencing
- **Multiplex:** able to detect several nucleic acid sequences in parallel

Applications:

- **Diagnostic :** biological analysis and R&D
- **Quality control :**
 - **Environment :** freshwater, sewage
 - **Security :** freshwater, epidemic survey
 - **Industrial process :** food, pharmaceutical, cosmetic industries

Bibliography:

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PATENTS:

Granted:
US 14/390 748
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BR 1120140246017
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