Ultrafast identification of sensitive biological agents

EQLIPS – A revolutionary PCR system
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Ultrafast identification of sensitive biological agents

The EQLIPS system, technology developed by Thales and BforCure within the framework of a contract with the DGA, allows identification of biological agents from a liquid sample using ultrafast, multiplex PCR. Once fully mature, EQLIPS* can be used in exclusion zones by operators wearing CBRN suits.

This demonstrator, currently at technological readiness level 5 (TRL5), comprises two modules for two stages of the analysis process:

• Sample preparation – concentration, purification and lysis (breaking down of cell membranes)
• Identification of biological agents by quantitative PCR (Polymerase Chain Reaction)** amplification

* E’Equipement de Lyse et d’Identification par PCR ultra-rapide des agents biologiques Sensibles (lysis and identification equipment using ultrafast PCR on sensitive biological agents).

** Polymerase chain reaction: technique for amplifying specific sequences of genetic information contained in biological cells, until there’s physically enough of the genetic information to be detected by optical systems.

INNOVATION AND BENEFITS

The EQLIPS system allows genetic identification:

• Using multiplex PCR, without splitting samples
• Of different kinds of biological agents present in the same liquid sample
• In under 15 minutes

This innovation is a significant breakthrough, with applications for defence, security and healthcare.

Once fully mature, EQLIPS will provide the Armed Forces with a compact tool for fast, sensitive and specific identification of the kinds of biological agents they could be exposed to.

USE CASES

Military:
Rapid detection and identification of microorganisms in environmental samples. Fast diagnosis of infected personnel.

Civilian:
Diagnosis decision support for clinicians at the point of care (analysis during the patient examination, results by the end of the consultation).