NATIONAL RESEARCH, DEVELOPMENT AND INNOVATION OFFICE HUNGARY

PROJECT FINANCED FROM THE NRDI FUND

Rapid viral diagnostics reagents, without the need for nucleic acid extraction

The standard protocol for virus detection from patient samples involves nucleic acid extraction, followed by amplification by quantitative polymerase chain reaction (qPCR) or isothermal amplification (LAMP). For RNA viruses, the reverse transcription step precedes the qPCR reaction (RT-qPCR) and the LAMP reaction (RT-LAMP).
The nucleic acid extraction step is critical: it removes components of the virus-containing sample and the saliva/sample cotton swab that inhibit the proper functioning of the qPCR/RT-qPCR and LAMP/RT-LAMP reactions. In the RVDR project, we are developing proteins for qPCR and LAMP reactions that are not inhibited by saliva. This will simplify clinical diagnostics when the DNA/RNA isolation step is not required.
As part of this project, TargetEx Ltd (www.targetex.com) has developed recombinant proteins that can be used to generate amplification reagents with broad inhibitor resistance. The BeaSTEx polymerase enzyme for LAMP reactions has excellent salt tolerance and the diagnosis time has been reduced to less than 10 minutes, representing a major step forward in improving the efficiency of POC diagnostics.

Project Data:
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