



Medizinische Universität Graz

STANDARDISED QUALITY OF DIAGNOSTICS AS KEY FACTOR TO IMPROVE QUALITY OF PRIMARY DATA TO MONITOR COVID-19

ERINHA-ADVANCE TNA Project

MUG - QIAGEN

H2020 Grant Agreement: 824061



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on Highly Pathogenic Agents

The Underestimated Impact of Sample Quality on Data Quality

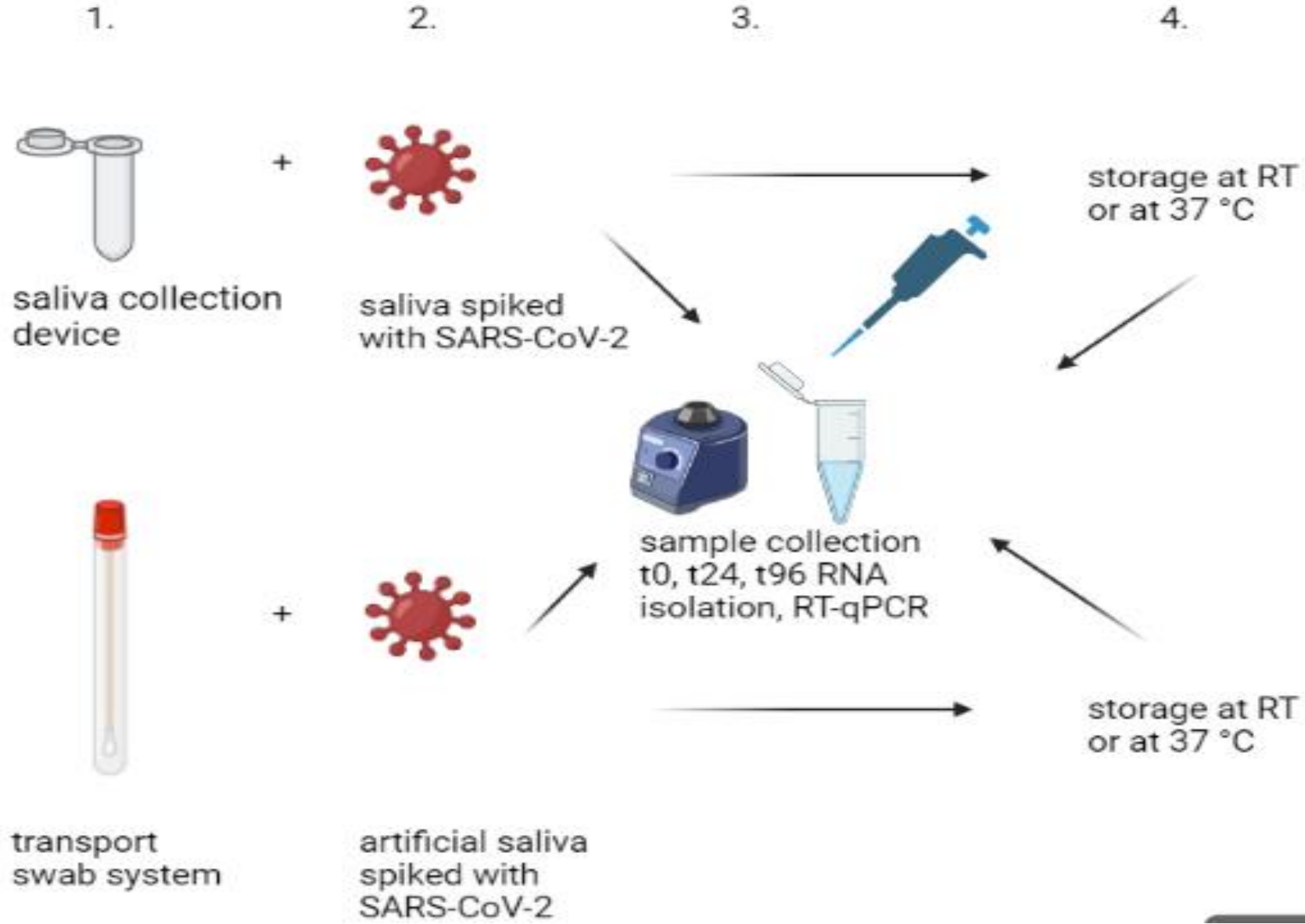
Report of UN Secretary-general's high-level Panel on Digital Cooperation:

“Gaps in the data on which algorithms are trained can likewise automate existing patterns of discrimination, as machine learning systems are only as good as the data that is fed to them.”

The garbage in and garbage out issue



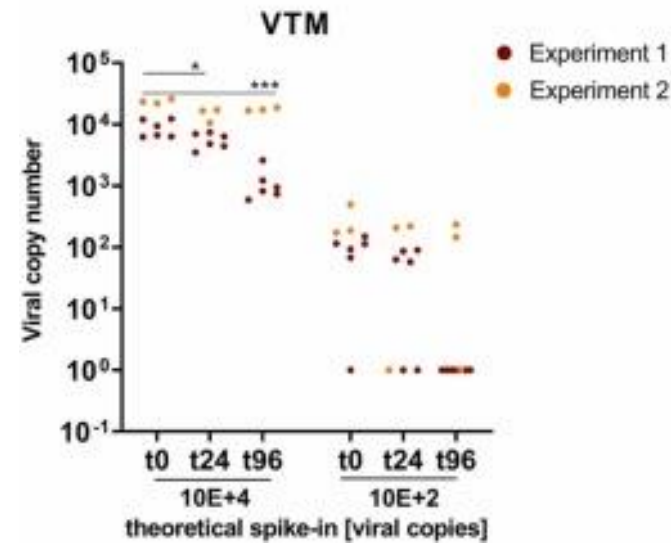
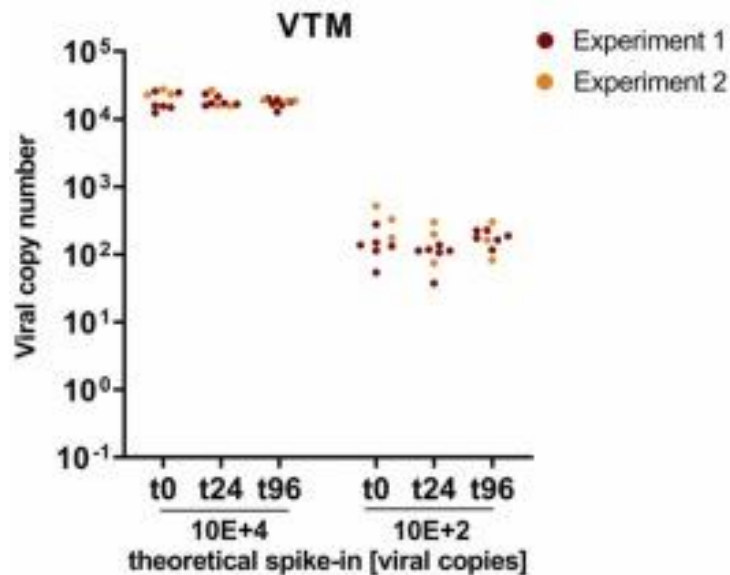
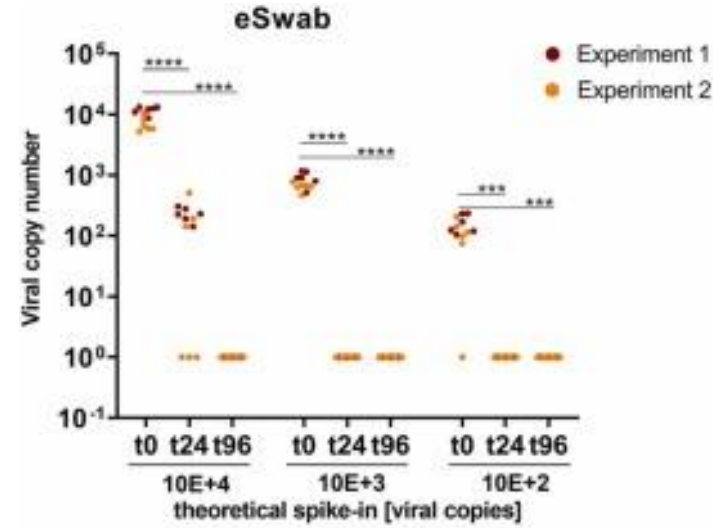
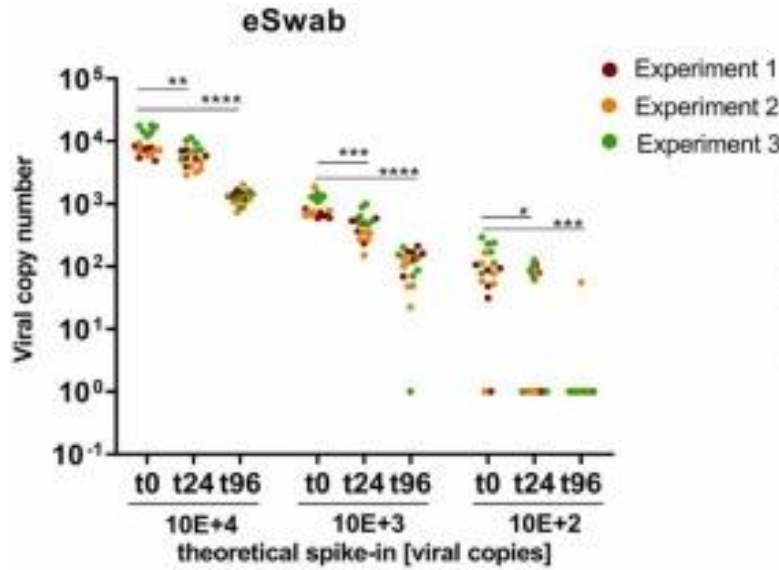
SARS-CoV-2 RNA stability under various storage conditions - pre-analytical study - workflow



Transport swab systems

RT

37 °C

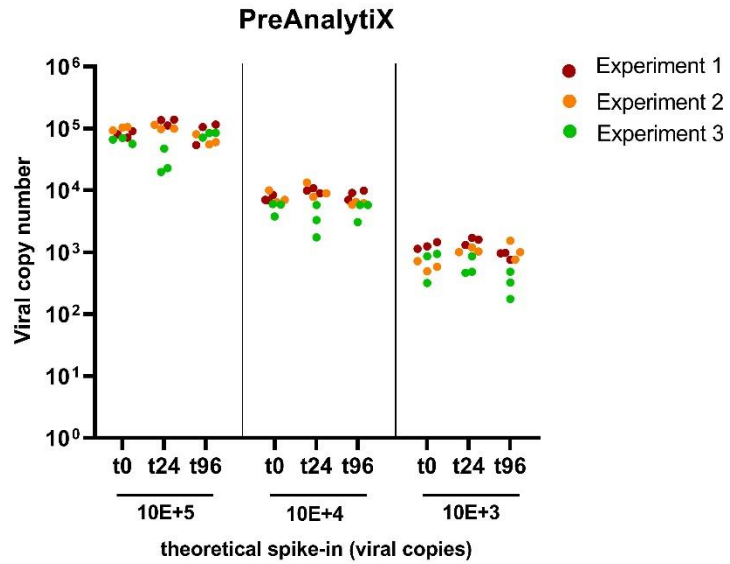


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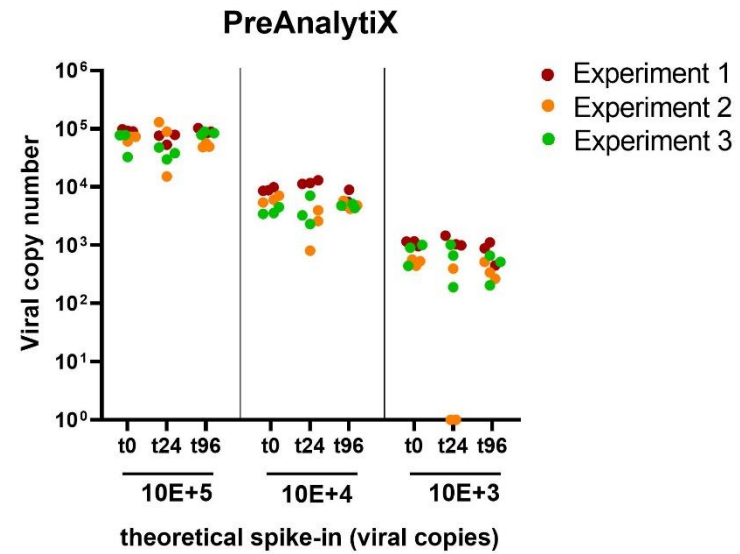
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Saliva collection devices

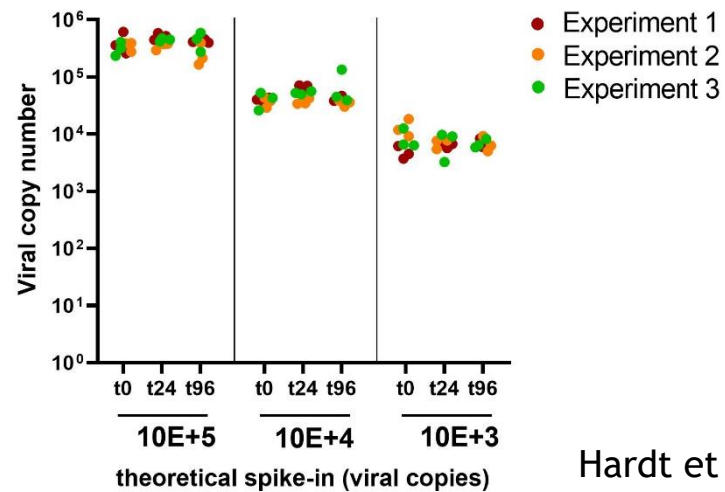
RT



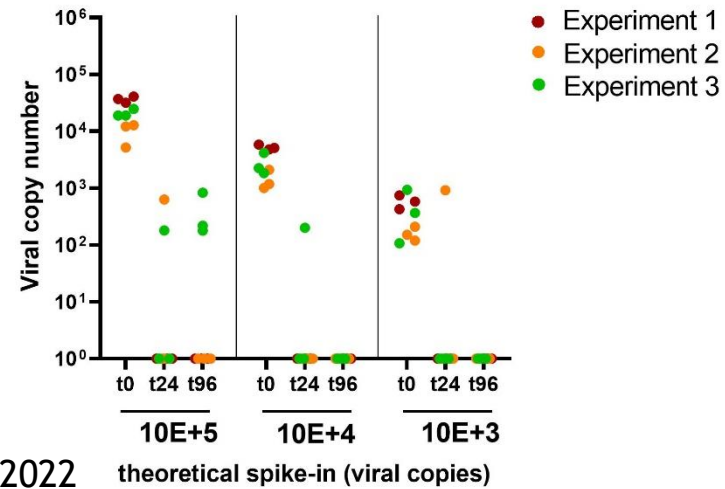
37 °C



Zeesan



Zeesan



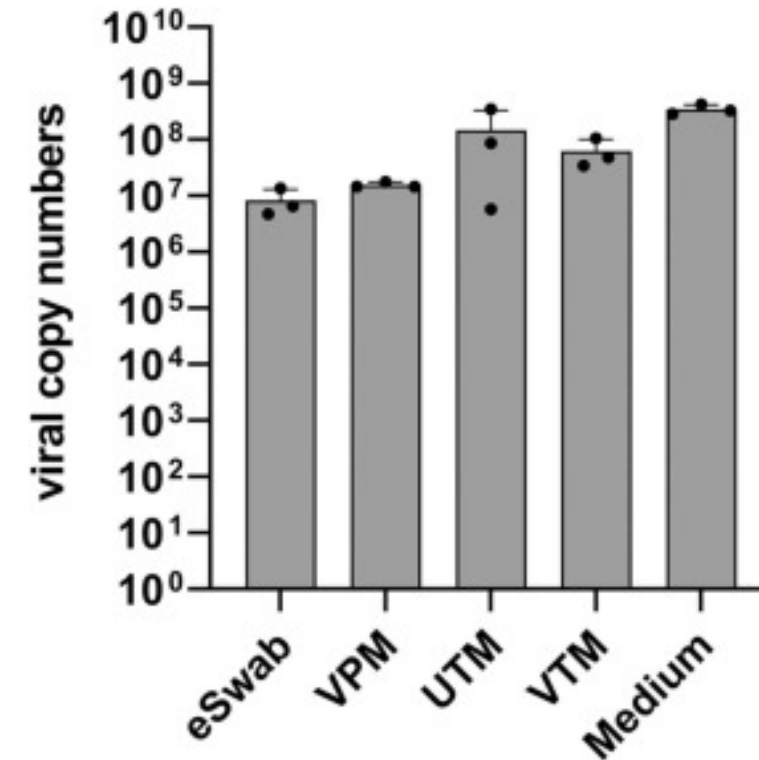
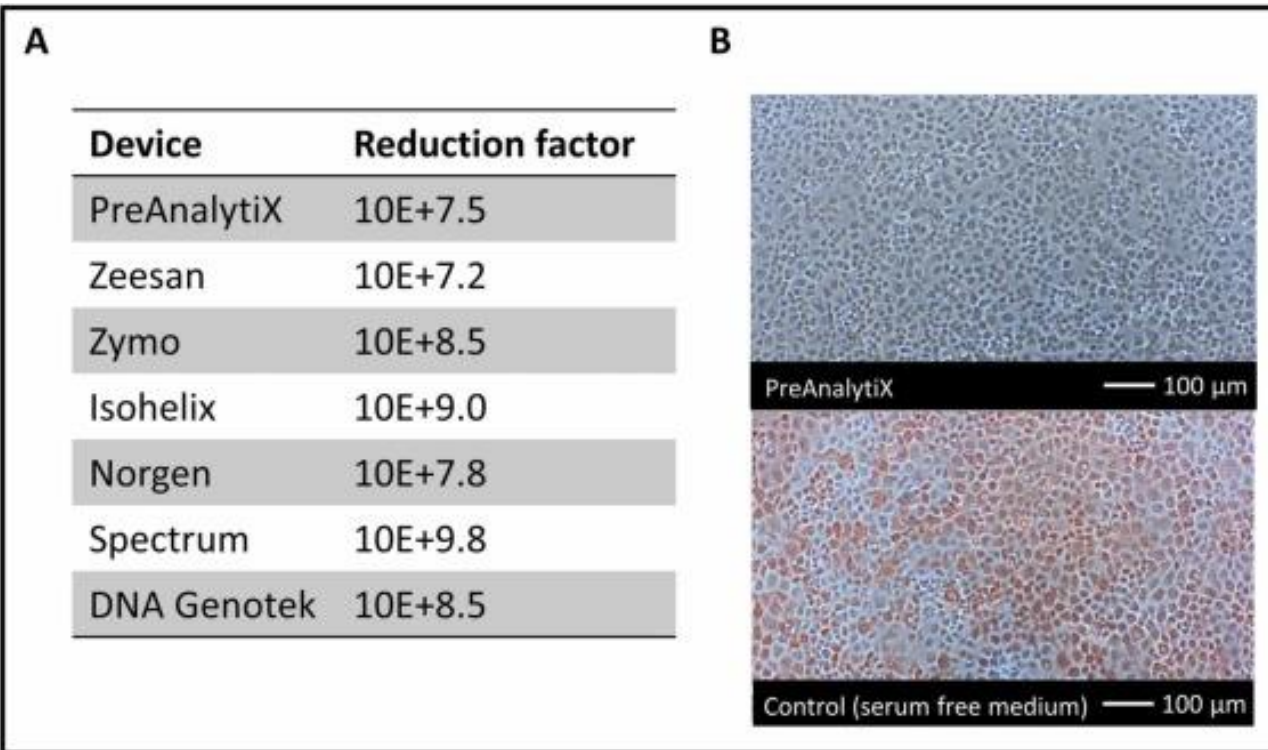
Hardt et al., New Biotechnology 2022



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Inactivation properties tested in an infection assay



► Saliva collection devices inactivated SARS-CoV-2

► Transport swab systems did not inactivate SARS-CoV-2

Key lessons learned

- ▶ Sample collection devices showed marked differences in their sample stabilizing properties
- ▶ Some collection devices may lead to false negative SARS-CoV-2 results even within 24 hours transportation, particularly during summer time
- ▶ Sample collection devices that inactivate the virus reduce infection risks during sample transport and analysis, and thereby facilitate building diagnostic capacities

➔ The impact of sample pre-analytics on data quality is often underestimated



European Research Infrastructure on Highly Pathogenic Agents

Fostering Research to Fight Epidemics

ERINHA is a pan-European distributed research infrastructure dedicated to the **study of high-consequence pathogens**

- **10 Members** throughout Europe
- Provides a coordinated access (CCU) to its member **high containment (BSL3+ a BSL4)** facilities & expertise
- **Target pathogens** prioritized by the WHO R&D Blueprint requiring a high-containment environment (Ebola, Marburg, Lassa...)
- **Research Scope:** From basic research to preclinical development and testing of MCMs
- Coordinates and is involved in a number of EU and International **projects:**

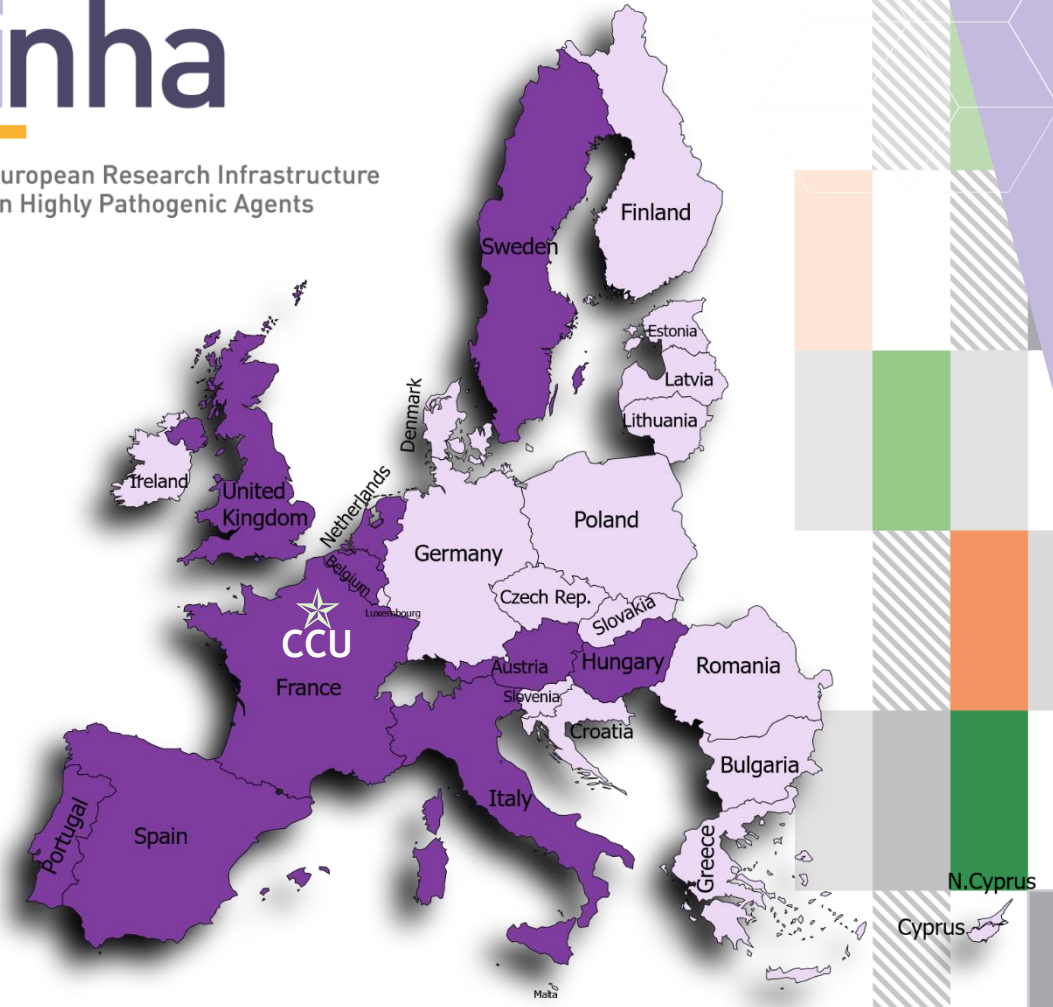


Integrated Services for infectious Disease Outbreak Research



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Many Thanks to a Great Team



and to our cooperation partner QIAGEN



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