

Meet&Match.Dx 2023



Simplify nucleic acid extraction and sample preparation

WITH **AIDIAN**



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Challenge 2:

Title: Simplified nucleic acid extraction and/or sample preparation

Challenge-owner: AIDIAN

Disease area (optional): General point-of-care.

Description of the challenge:

1. Short introduction about the disease, the problem, or the process related to your challenge and desired solution.

Point-of-care (POC) diagnostics are used to allow fast diagnosis and treatment. These diagnostic tools are further categorized as immuno or molecular diagnostics, where immuno detects antibody or antigen, and molecular nucleic acids. Molecular diagnostics is the golden standard in situations where it is important to distinguish which virus or bacterium has caused the infection.

2. Describe the current treatment/solution (if any) and its limitations.

Most of the POC molecular diagnostics instruments amplify target specific nucleic acids and then detect them with various technologies. Amplification is performed either from crude or from purified nucleic acid samples. Amplification methods applying crude samples, such as saliva or respiratory sample media, often suffer from limited performance compared to methods that apply purified nucleic acids, difficulties arising e.g. from sample derived inhibitory substances or from used transport media. Amplification methods that apply purified nucleic acids do not have such limitations. However, they require complicated nucleic acid extraction steps. These steps are often integrated into used POC cartridge in order to allow better usability and to reduce hands-on time by the end user, at the same time increasing the cost of the POC molecular tests.

3. Describe which kind of solution you are looking for:

We are looking for a next-generation molecular diagnostics nucleic acid extraction or sample preparation methods and materials that would require only a few steps, inexpensive reagents and that could be integrated into molecular diagnostics tests.

Write a sentence about the solution/product/technology you are looking for: A technology that allows simple and efficient nucleic acid extraction or sample preparation from crude samples in less than five minutes that could be integrated into inexpensive POC molecular diagnostics cartridges or into larger IVD instruments.

4. Write a more detailed description of the ideal solution.

Ideal solution would have following characteristics:

- Nucleic acid extraction or sample preparation in less than five minutes.
- Processing of crude samples, such as saliva or respiratory sample media, in swab or liquid form.
- Prepared sample can be used in isothermal nucleic acid amplification methods, such as LAMP, without sample derived inhibition.
- No centrifugation or high temperature is required in sample processing. All steps should be performed at room temperature.
- No specific laboratory equipment, such as precision pipettes, are required.
- Will be manufactured using normal existing mass production technologies.
- Ready-to-market timeline in three years.

5. Target group:

Personnel performing POC measurements at primary care and in hospitals.

How to apply for Meet&Match.Dx Programme?

- Check your eligibility:
 - Does your company meets the [SME definition](#) of the EU (more details via [SME self-assessment](#))?
 - Did your SME receive more than a total of €200.000 of *de Minimis state* aid between 2020 and 2022? For more information about de-minimis aid. You can find helpful information via these links [de minimis rule](#) and [state aid](#).
- Before you apply, read the full [Meet & Match.Dx programme](#) description
- Submit your application via the [application portal](#) until 16 April 2023, 23:59 CET.