self diagnostics

NINAAT technology

The new NINAAT platform is a miniature one-step PCR that enables detection of bacteria, viruses and protozoa within 30 minutes anywhere by anyone.

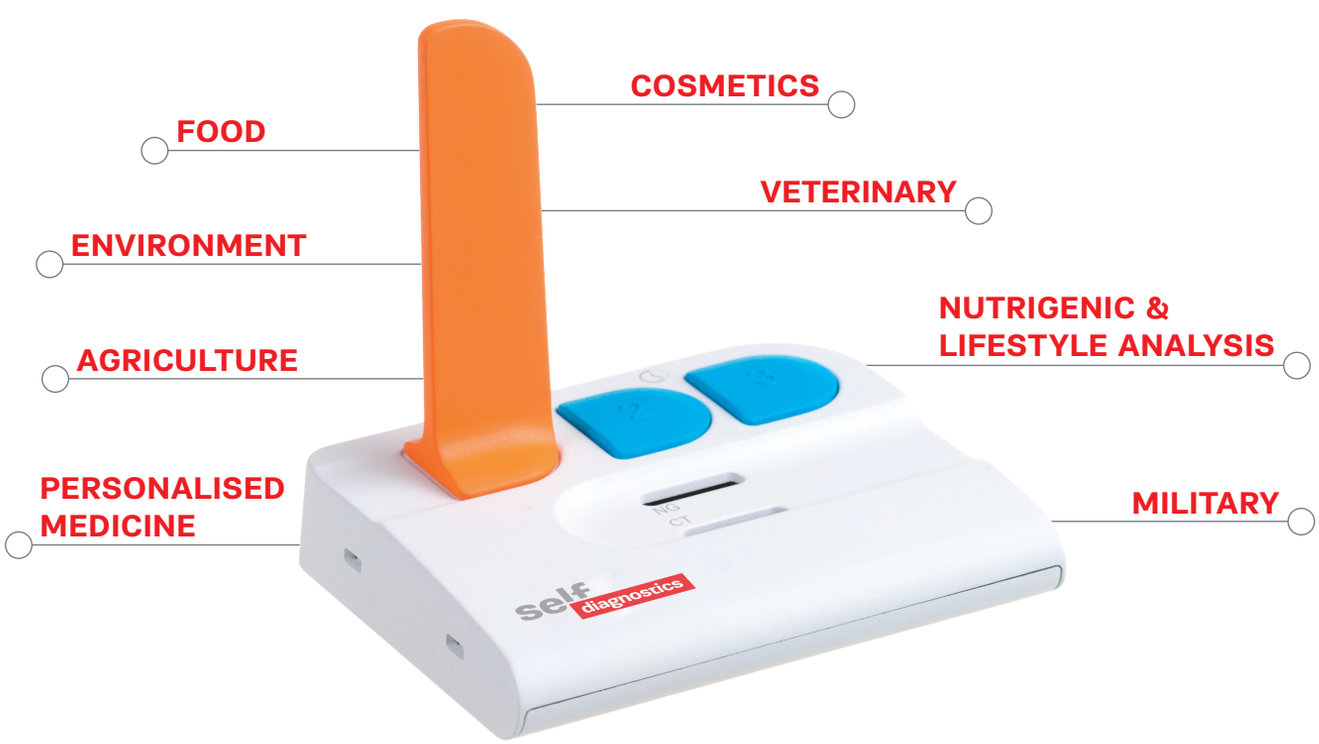
Why use our NINAAT over other PCR-based diagnostics:

- **FASTER** THAN CURRENT SOLUTIONS ON THE MARKET
- **STABLE** AT ROOM TEMPERATURE
- **SMALLEST** AND MOST **ROBUST** PCR IN THE WORLD
  doesn't require instruments

Why use our NINAAT over other OTC test technologies:

- **ACCURACY** EQUAL TO LABORATORY
- END-USER **FRIENDLY**
  non-invasive and only 2 steps
- **NEW** PATHOGENS AND MULTIPLEXING
  to diversify portfolio

Our technology is a solid and reliable foundation that can easily be adapted for various industries, where it is vital to detect viruses, bacteria, protozoae or other organisms.



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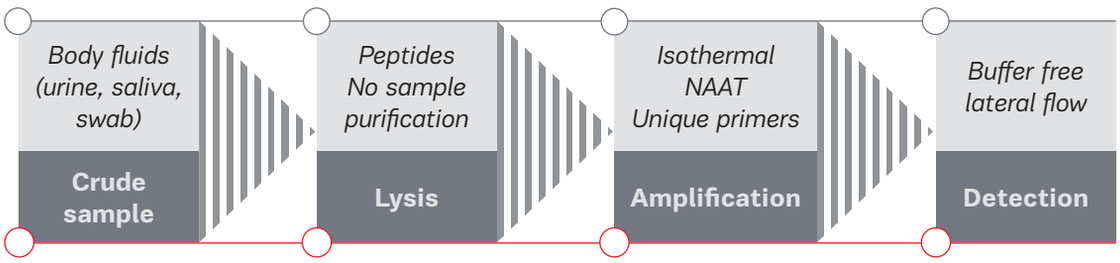
How does the NINAAT technology work?

Technology uses a crude sample; no purification is required. As a result, the platform avoids complicated and time-consuming DNA extraction procedures. The amplification process is isothermal, it does not require any temperature cycles nor any instrumentation.



The technological invention of Selfdiagnostics is a combination of a robust sample preparation, specific DNA detection and isothermal amplification with a simple lateral flow visualisation combined with self-regulating micro-heater and operated by passive microfluidics. Each invention possesses an innovative approach to contribute to the entire platform. Sample preparation with carefully selected lysis agents allow direct amplification within the sample, avoiding complicated sample purification steps. Further on, lysed sample is introduced to the device where liquids are transported via passive microfluidics into the reaction chamber that already includes lyophilised components for the amplification reaction. Lyophilised form of components assures instant solubility and long-term shelf life. Integration of a microfluidic chip with self-regulative micro heater provides sufficient temperature for isothermal amplification reaction that is in range of 62 degrees Celsius.

The platform contains two levels of multiplexing:
(1) molecular multiplexing, where more than one targeted amplification reactions occur in the same solution and (2) physical multiplexing, where sample is divided evenly into multiple reaction chambers allowing to carry out parallel amplification reactions. After the reaction, the very same reaction liquid containing generated amplicons are transported via passive microfluidics to a modified buffer free lateral flow strips where the final visualisation of the presence of amplicons are detected. This is for a positive signal, for negative signal there are no amplicons, i.e. no amplification reaction occurred.

All these elements are selfstanding inventions that can be viewed separately fulfilling specific tasks or considered as parts of the whole NINAAT platform, integrated via smart microfluidic liquid handling. 6 patent families are pending to protect previously mentioned inventions. The NINAAT platform can easily be tailored to detect different DNA or RNA targets (pathogens, organisms, etc.), similar to conventional PCR technology. Depending on the sample type, the sample preparation needs to be adapted and specific target primers need to be developed. Depending on complexity and desired outcome of the task, the development time can span from 3 to 12 months.

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For more information please visit:
www.selfdiagnostics.com

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