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# **Integration of isothermal amplification methods in microfluidic devices: recent advances**

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## **Abstract**

The integration of nucleic acids detection assays in microfluidic devices represents a highly promising approach for the development of convenient, cheap and efficient diagnostic tools for clinical, food safety and environmental monitoring applications. Such tools are expected to operate at the point-of-care and in resource-limited settings.

The amplification of the target nucleic acid sequence represents a key step for the development of sensitive detection protocols. The integration in microfluidic devices of the most popular technology for nucleic acids amplifications, polymerase chain reaction (PCR), is significantly limited by the thermal cycling needed to obtain the target sequence amplification. This review provides an overview of recent advances in integration of isothermal amplification methods in microfluidic devices. Isothermal methods, that operate at constant temperature, have emerged as promising alternative to PCR and greatly simplify the implementation of amplification methods in point-of-care diagnostic devices and devices to be used in resource-limited settings. Possibilities offered by isothermal methods for digital droplet amplification are discussed.

## **Abbreviations:**

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