

# **Cutting-edge technologies for isothermal molecular diagnostics of COVID-19**

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As of October 2023, the outbreak of coronavirus disease 2019 (COVID-19) has killed over 6 million people, severely threatening global peace and security by posing unprecedented challenges on human beings. As an advanced tool for molecular diagnostics, isothermal amplification of nucleic acids is a promising technology given that amplification is swiftly performed under constant temperature, in contrast to conventional PCR-based amplification, which requires a thermo-cycling machine to separate two strands of the DNA product. The characteristic advantages of isothermal amplification, including miniaturized apparatus, rapid amplification, and simple reaction procedure, are expected to be adequate for POCT or on-site molecular diagnostics to effectively contain COVID-19 even in resource-limited settings. In this presentation, I will discuss various isothermal amplification technologies applied for the molecular diagnostics of COVID-19 with an emphasis being given to the novel isothermal amplification technologies developed in my group.