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## A Simple RNA Preparation Method for SARS-CoV-2 detection by RT-qPCR

Aniela Wozniak<sup>1</sup>, Catalina Ibarra-Henriquez<sup>2</sup>, Valentina Sebastian<sup>3</sup>, Grace Armijo<sup>2</sup>, Liliana Lamig<sup>2</sup>, Carolina Miranda<sup>3</sup>, Marcela Lagos<sup>1</sup>, Sandra Solari<sup>1</sup>, Ana María Guzmán<sup>1</sup>, Teresa Quiroga<sup>1</sup>, Susan Hitschfeld<sup>2</sup>, Eleodoro Riveras<sup>2</sup>, Marcela Ferres<sup>1</sup>, Rodrigo A. Gutiérrez<sup>2</sup>, Patricia García<sup>1</sup>, Ariel Cerda<sup>2</sup>

<sup>1</sup>Departamento de Laboratorios Clínicos. Escuela de Medicina. Facultad de Medicina. Pontificia Universidad Católica de Chile;

<sup>2</sup>FONDAP Center for Genome Regulation. Millennium Institute for Integrative Biology (iBio), Departamento de Genética Molecular y Microbiología, Pontificia Universidad Católica de Chile, Santiago, 8331150, Chile;

<sup>3</sup>Laboratorio de Microbiología. Servicio de laboratorios Clínicos. Red de Salud UC-CHRISTUS

3

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Coronavirus Method Development Community

Reclone.org (The Reagent Collaboration Network)



Catalina Ibarra-Henriquez  
Pontificia Universidad Catolica de Chile

### ABSTRACT

The technique RT-qPCR for viral RNA detection is the current worldwide strategy used for early detection of the novel coronavirus SARS-CoV-2. RNA extraction is a key pre-analytical step in RT-qPCR, often achieved using commercial kits. However, the magnitude of the COVID-19 pandemic is causing disruptions to the global supply chains used by many diagnostic laboratories to procure the commercial kits required for RNA extraction. Shortage in these essential reagents is even more acute in developing countries with no means to produce kits locally. We sought to find an alternative procedure to replace commercial kits using common reagents found in molecular biology laboratories. Here we report a method for RNA extraction that takes about 40 min to complete ten samples, and is not more laborious than current commercial RNA extraction kits. We demonstrate that this method can be used to process nasopharyngeal swab samples and yields RT-qPCR results comparable to those obtained with commercial kits. Most importantly, this procedure can be easily implemented in any molecular diagnostic laboratory. Frequent testing is crucial for individual patient management as well as for public health decision making in this pandemic. Implementation of this method could maintain crucial testing going despite commercial kit shortages.

### EXTERNAL LINK

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### KEYWORDS

Coronavirus, SARS-CoV-2, RNA extraction

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#### SAFETY WARNINGS

Please refer to the Safety Data Sheets (SDS) for health and environmental hazards. Obtain all necessary approvals from relevant Ethics Committees.

#### FILES

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Preliminary Evaluation of RNA Extraction Methods  
by Catalina Ibarra-Henriquez, Pontificia Universidad Catolica de Chile
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Validation of Selected RNA Extraction Method  
by Catalina Ibarra-Henriquez, Pontificia Universidad Catolica de Chile