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A rapid and efficient method for isolation of total RNA from *Euglena gracilis* (Euglenoidea)

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ABSTRACT. RNA isolation is essential to the study of gene expression at the molecular level. However, it is difficult to isolate RNA from organisms that contain large amounts of polysaccharides or other compounds that bind or coprecipitate with RNA, such as the unicellular protist *Euglena gracilis*. Currently, there is no commercial kit available that is specific for the isolation of high-quality RNA from this organism. Since it contains large amount of polysaccharides, the common protocols for RNA isolation usually result in poor yields when applied to *E. gracilis*. We developed a simple and fast RNA protocol that effectively removes these contaminating substances, without affecting the RNA yield. This protocol was based on the sodium dodecyl sulfate/phenol method, without β-mercaptoethanol and without maceration in liquid nitrogen; it uses phenol/chloroform extraction to remove proteins, DNA, and co-precipitated polysaccharides. The RNA isolated by this protocol is of sufficient quality for molecular applications; this technique could be applied to other organisms that have similar substances that hinder RNA extraction.

Key words: *Euglena gracilis*; Sodium dodecyl sulfate-Tris; RNA isolation; Reverse transcription-polymerase chain reaction

