

# rRT-PCR

<http://rockedu.rockefeller.edu>

Steps  
1-3

## RT

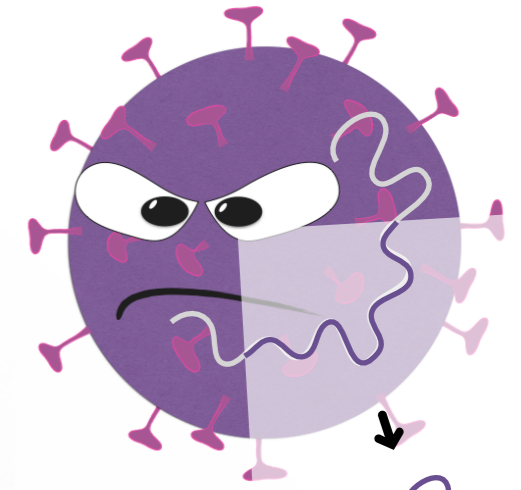
### Reverse Transcriptase

Transcription: DNA → RNA

Reverse Transcription: RNA → DNA

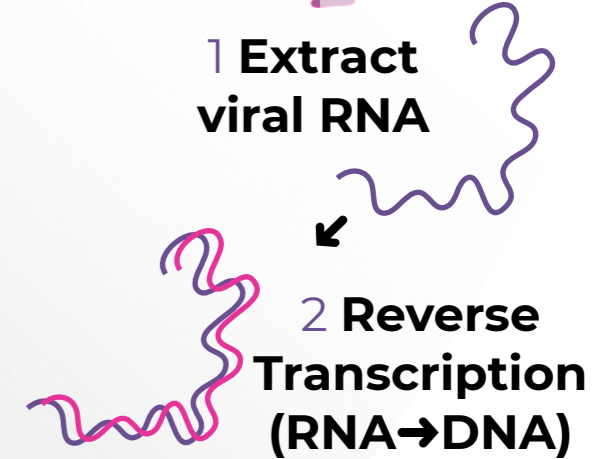
The enzyme that does reverse transcription is called *Reverse Transcriptase*.

This step is required for viruses with RNA genomes. The genome must be converted to DNA to work with the DNA polymerases in the PCR assay.



1 **Extract viral RNA**

2 **Reverse Transcription (RNA → DNA)**



3 **Making a DNA template for PCR**

4 **Primers bind to DNA**

Small primer sequences have big impact because they are so specific

6 **And multiple copies of that DNA sequence are created**

5 **DNA is built off of those primers**

Steps  
4-6

## PCR

### Polymerase Chain Reaction

PCR is a common technique for repeatedly amplifying a specifically identified segment of DNA in order to create enough copies for a signal to be detected.

Step  
7

rt or q

real-time or  
quantitative

We quantify the amount of light produced as a way to measure how much DNA is present. Results can come in minutes!

7 **Finally, more light (fluorescence) is measured every time a probe binds in that copying process**

lots of stars/light  
POSITIVE

no probes bound  
NEGATIVE

