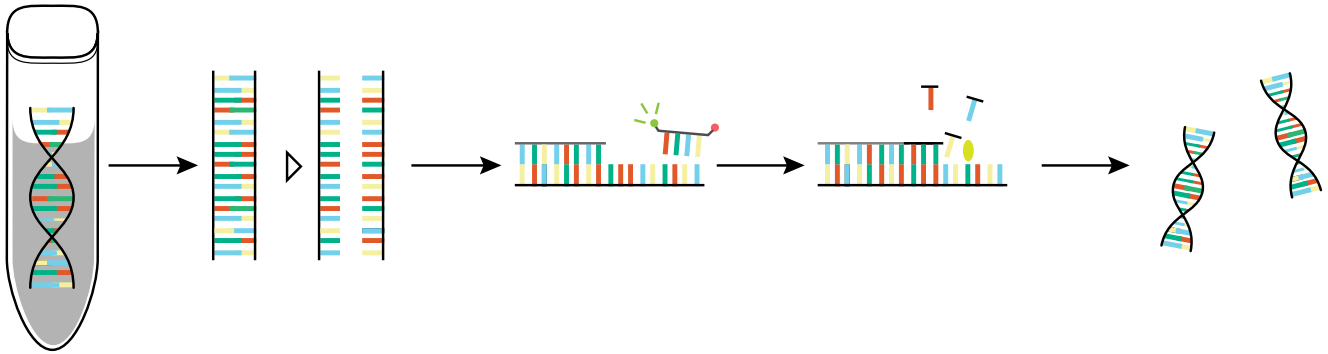
What is qPCR?



The DNA is extracted from the patient sample and added to a pre-prepared tube supplied by the kit manufacturers. The tubes are placed into a thermocycler which is a machine which cycles between high and low temperatures to cause the DNA strands to separate and be replicated.

The strands are first heated causing them to separate.

They are then cooled allowing the binding of (i) primers to initiate replication of the DNA and (ii) fluorescent probes for detection of the DNA.

The temperature is then raised again causing the enzyme to copy the DNA by adding the extra synthetic DNA parts.

There is now double the amount of the original DNA in the tube. This process is repeated for 30-45 cycles until there is enough DNA present in the tube to be detected and quantified.

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Value in Knowledge