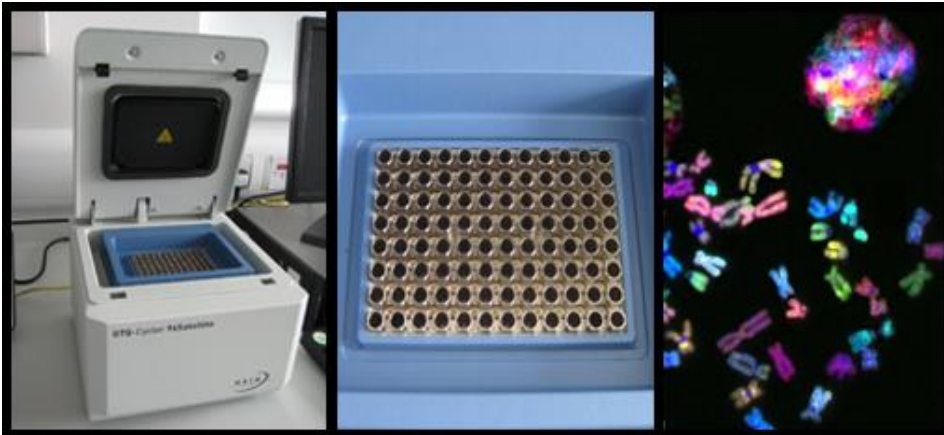




The Royal College of Pathologists

Pathology: the science behind the cure

## Object 29: PCR



### What is it?

PCR stands for polymerase chain reaction and is a molecular technique used to make billions of copies of DNA sequences from a tiny sample. The PCR machine is also known as a thermocycler or DNA amplifier as the process requires cyclical increases in temperature and results in an increased number of copies of the DNA present.

### History

PCR was invented in 1983 by American biochemist Kary Mullis. The impact of PCR was so great that Mullis was awarded the Nobel Prize for Chemistry in 1993. Before PCR, DNA could be multiplied but not isolated, limiting its usefulness. PCR is also many times faster than earlier techniques and requires relatively simple equipment.

### Pathology

PCR uses the enzyme DNA polymerase to produce millions of copies of specific lengths of DNA. PCR has led to great advances in many areas of pathology including genetics, clinical biochemistry, microbiology and forensics. The diagnosis of inherited diseases, genetic fingerprinting and the diagnosis of infections all rely on PCR. The technique is now widely used in research and diagnostic laboratories worldwide.

### Find out more

Hear Kary Mullis explain how PCR was named on the [DNA Learning Centre Website](#).