

Molecular and Cellular Biology: Human or Rat? PCR lab

Dr Jon Cherry, November 2021

What is the difference between human and rat DNA? That was the question put to our first year Medical Biology students. Using the polymerase chain reaction (PCR), it was their job to find out!

Thanks to the Covid-19 pandemic, PCR is a technique we have all become familiar with hearing about over the last few years, yet very few would know how it works. It is a process based around amplifying a defined region of DNA, using short and specifically designed DNA sequences called primers. Our students had the opportunity to try this first-hand.

Armed with primers designed (by our students!) to specifically amplify human or rat DNA, the students got to test the specificity of a PCR reaction. Human primers should only amplify human DNA, and vice-versa, allowing positive identification of the human and rat DNA samples. Our students therefore learned crucial aspects of the PCR process, such as primer design, RT-PCR for template generation and analysis via gel electrophoresis.

