

WOMEN WHO MADE BRITAIN

Rosalind Franklin

At King's College London, Rosalind Franklin obtained images of DNA using X-ray crystallography, an idea first broached by Maurice Wilkins. Franklin's images allowed James Watson and Francis Crick to create their famous two-strand, or double-helix, model.

In 1962 Watson (b. 1928), Crick (1916–2004), and Wilkins (1916–2004) jointly received the Nobel Prize in Physiology or Medicine for their 1953 determination of the structure of deoxyribonucleic acid (DNA). Wilkins's colleague Franklin (1920–1958), who died from cancer at the age of 37, was not so honoured. The reasons for her exclusion have been debated and are still unclear. There is a Nobel Prize stipulation that states "in no case may a prize amount be divided between more than three persons." The fact she died before the prize was awarded may also have been a factor, although the stipulation against posthumous awards was not instated until 1974.

Of the four DNA researchers, only Rosalind Franklin had any degrees in chemistry. She was born into a prominent London banking family, where all the children—girls and boys—were encouraged to develop their individual aptitudes. She attended Newnham College, one of the women's colleges at Cambridge University. She completed her degree in 1941 in the middle of World War II and undertook graduate work at Cambridge with Ronald Norrish, a future Nobel laureate. She resigned her research scholarship in just one year to contribute to the war effort at the British Coal Utilization Research Association. There she performed fundamental investigations on the properties of coal and graphite. She returned briefly to Cambridge, where she presented a dissertation based on this work and was granted a PhD in physical chemistry. After the war, through a French friend, she gained an appointment at the Laboratoire Centrale des Services Chimiques de l'Etat in Paris, where she was introduced to the technique of X-ray crystallography and rapidly became a respected authority in this field. In 1951 she returned to England to King's College London, where her charge was to upgrade the X-ray crystallographic laboratory there for work with DNA.

Modern biotechnology has its basis in the structural knowledge of DNA such as the scientist's ability to modify the DNA of host cells that will then produce a desired product, for example, insulin. Modern Biochemistry could therefore have been a less potent force in the fight against infections – including Corona Virus. It should not be forgotten also that DNA analysis is now a fundamental tool in criminal investigations.

Rosalind Franklin deserves much wider acknowledgment for her contribution.