

Erwin Chargaff

[Science](#), [Genetics](#)



My name is Erwin Chargaff and I discovered the structure of DNA. After reading Oswald Avery's report, in 1944, about how genes were composed of DNA I became motivated to begin work on the chemistry of nucleic acids. I started researching with the belief that DNA from different species are different so I had to come up with an experiment to examine the DNA from different species. It was hard for me because I couldn't get large amounts of DNA so it took a while for my experimenting. After about 2 years I was able to come up with a solid procedure containing three steps.

First, I had to separate the DNA mixture with chromatography paper. Then I converted the separated components into mercury salts and last but not least I was able to identify the purines and pyrimidines (the building blocks of nucleic acids) by using their ultraviolet absorption spectra. I tested this method several times and was finally able to use it to examine the DNA of yeast and pancreatic cells. About a month later, I submitted two papers on my findings of the DNA of calf thymus and beef spleen and tubercle bacilli and yeast.

My papers were rejected so I decided to improve my procedure and by doing that I was able to examine more species. I summarized what I found on nucleic acids in a review and finally in 1950, my experimenting led to me discover important facts. I came up with three rules that I named as Chargaff's rule. The first rule is that the number of Adenine always equals the number of thymine. The second is that the number of guanine always equals the number of cytosine and the last one is that the purines (adenine and guanine) always equal the number of pyrimidines (thymine and cytosine).

I was also able to prove that the DNA of various species are different from one another. I did not collaborate with anyone for my experiment but two years later I explained my findings to Watson and Crick who were then later to come up with the DNA structure. I was a bit surprised that I wasn't included in the Nobel Prize since I did share my information with Watson and Crick and with that they were able to come up with the model. So, after Watson and Crick won the Nobel Prize, I withdrew from my lab and started to write essays and lectures.