



Division of the History of Chemistry  
American Chemical Society

## Citation for Chemical Breakthrough

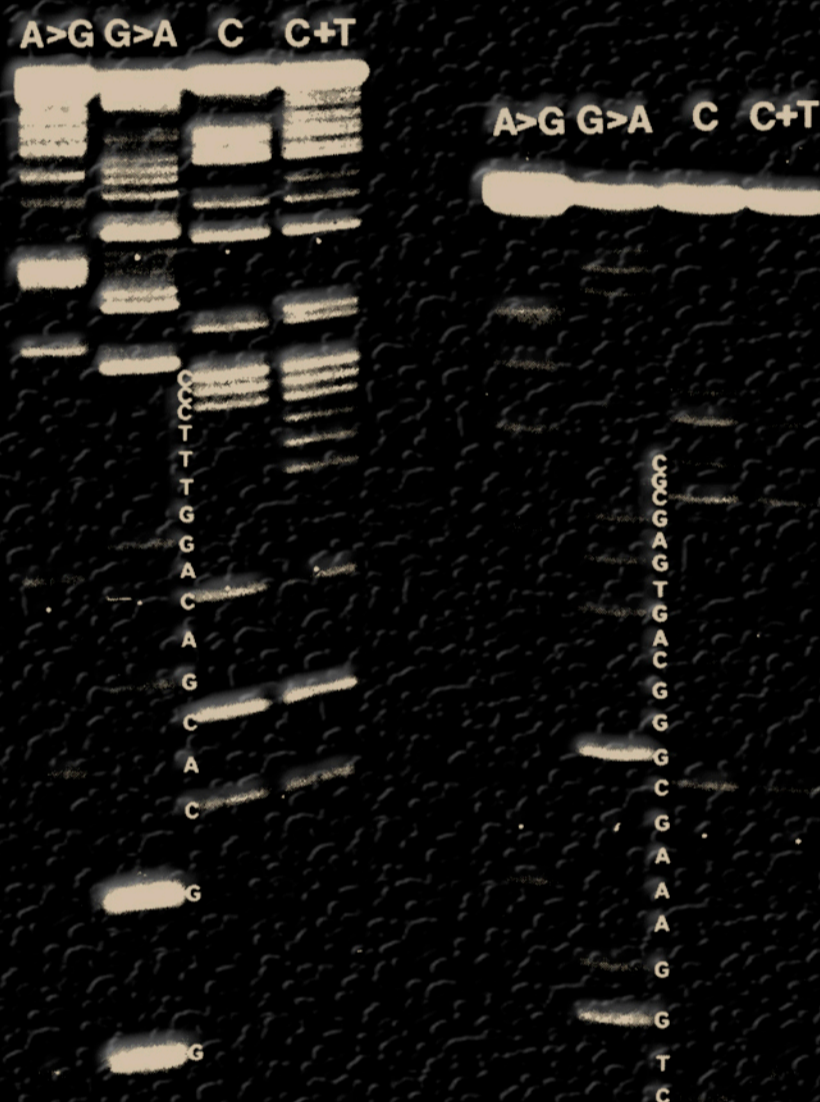


Proceedings of the National Academy of Sciences, USA, 74, 560-564, 1977.

### A new method for sequencing DNA

ALLAN M. MAXAM AND WALTER GILBERT

Department of Biochemistry and Molecular Biology, Harvard University, Cambridge, Massachusetts 02138



**ABSTRACT** DNA can be sequenced by a chemical procedure that breaks a terminally labeled DNA molecule partially at each repetition of a base. The lengths of the labeled fragments then identify the positions of that base. We describe reactions that cleave DNA preferentially at guanines, at adenines, at cytosines and thymines equally, and at cytosines alone. When the products of these four reactions are resolved by size, by electrophoresis on a polyacrylamide gel, the DNA sequence can be read from the pattern of radioactive bands. The technique will permit sequencing of at least 100 bases from the point of labeling.

Presented to the Department of Molecular and Cellular Biology, Harvard University, 2017