United States Patent

Bianco et al.

[54] PHβ29 DNA POLYMERASE

[75] Inventors: Luis Blanco; Antonio Bernad; Margarita Salas, all of Madrid, Spain

[73] Assignee: Consejo Superior Investigaciones Científicas, Madrid, Spain

[21] Appl. No.: 328,462

[22] Filed: Mar. 24, 1989

[51] Int. Cl: C12Q 1/7b; C12N 9/12; G01N 33/566; C12P 19/34

[52] U.S. Cl. 435/5; 435/6; 435/91; 435/19.9; 435/183; 435/172.3; 436/501; 436/93

[58] Field of Search 435/5; 91, 194, 810, 435/5; 436/501; 935/77, 78

[56] References Cited

U.S. PATENT DOCUMENTS

4,795,699 1/1989 Tabor et al. 435/5
4,921,794 5/1990 Tabor et al. 435/194
4,942,130 7/1990 Tabor et al. 435/172.3
4,946,786 8/1990 Tabor et al. 435/194

OTHER PUBLICATIONS


Primary Examiner—Robert A. Wax
Assistant Examiner—Stephanie W. Zitomer
Attorney, Agent or Firm—Fish & Richardson

ABSTRACT

An improved method for determining the nucleotide base sequence of a DNA molecule. The method includes annealing the DNA molecule with a primer molecule able to hybridize to the DNA molecule; incubating the annealed mixture in a vessel containing four different deoxynucleoside triphosphates, a DNA polymerase, and one or more DNA synthesis terminating agents which terminate DNA synthesis at a specific nucleotide base, wherein each the agent terminates DNA synthesis at a different nucleotide base; and separating the DNA products of the incubating reaction according to size, whereby at least a part of the nucleotide base sequence of the DNA can be determined. The improvement is provision of a DNA-polymerase which is a ϕ29-type DNA polymerase.

20 Claims, 2 Drawing Sheets