

Genetic Information Analysis of Bacteriophage ϕ x 174

Figueroa, R.

Sepúlveda, A.

Soto, M. A.

Tohá, J.

The genetic information of ϕ x 174 genome (genes and intermediate segments) is analyzed in terms of its independent (D1 index) and dependent information (D2 and D3 Markovian indexes), as well as of its ability to generate secondary structure. Genes B and E, enclosed in A and D respectively, have: 1) values of D1 and D3 indexes closer to the theoretical random distribution curves than those of (A ϕ B) and (D ϕ E) gene fractions, and 2) in the ability for secondary structure generation minor differences with genes A and D. F ϕ G and mRNA start ϕ A intermediate segments differ from randomness in their D1 and D2 indexes, but not so much in the D3 values. All these data point out the use of code degeneracy for increasing the genetic information density of the virus. © 1977, Verlag der Zeitschrift für Naturforschung. All rights reserved.