Sequence gel reading with a portable computer

Clyde A.Hutchison III

Department of Microbiology and Immunology, 804 F.L.O.B. 231H, University of North Carolina, Chapel Hill, NC 27514, USA

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DNA sequence data is traditionally transcribed onto paper, then typed into a computer for further analysis. This is a tedious, error prone process, which is often a bottleneck that discourages analysis of all the available data. One solution to the problem is the use of a digitizer for direct data entry (Lautenberger, J.A.(1982) Nucl. Acids Res. 10, 27-30). This report describes a rapid, convenient, and economical alternative.

A portable computer (Radio Shack TRS-80 Model 100) may be used to read sequencing gels. This computer is quite similar in size and weight to "Molecular Cloning, A Laboratory Manual"(Maniatis, T., Fritsch, E.F., and Sambrook, J.(1982) Cold Spring Harbor Laboratory). Portability is a valuable feature since it allows data entry at convenient locations such as an individual's desk, or at home. Data is easily transferred to a larger computer for assembly by programs such as the "DB System" (Staden, R. (1982) Nucl. Acids Res. 10, 4731-4751). The following programs are available (send an IBM-PC or TRS-80 Model 100 diskette):

SEQINP - Four adjacent keys are assigned to correspond, in order, to the four lanes of a sequence ladder. As the sequence is entered, four musical tones are sounded corresponding to the four lanes. The reader's eyes remain trained on the gel as data is entered. Even non-typists achieve accurate data entry. A proofreading and editing mode allows playback of a previously entered sequence, with each base displayed as a character on the computer screen and also as a musical tone. This allows visual concentration on the sequencing gel during proofreading.

BATCAT - concatenates individual sequence gel readings into a file for batch entry to the Staden DB system using the BATIN program.

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