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Sequence Dependent Electrophoretic Separations of DNA in Pluronic F127 Gels SEUNGYONG YOU, DAVID H. VAN WINKLE, Florida State University — Two-dimensional (2-D) electrophoresis has successfully been used to visualize the separation of DNA fragments of the same length. We electrophorese a double-stranded DNA ladder in an Agarose gel for the first dimension and in gels of Pluronic F127 for the second dimension at room temperature. The 1000 bp band that travels together as a single band in an Agarose gel is split into two bands in Pluronic gels. The slower band follows the exponential decay trend that the other ladder constituents do. After sequencing the DNA fragments, the faster band has an apparently random sequence, while the slower band and the others have two A-tracts in each 250 bp segment. The A-tracts consist of a series of at least five adenine bases pairing with thymine bases. This result leads to the conclusion that the migration of the DNA molecules bent with A-tracts is more retarded in Pluronic gels than the wild-type of DNA molecules.

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