

Title (en)
METHODS FOR MEASURING PHYSICAL CHARACTERISTICS OF NUCLEIC ACIDS BY MICROSCOPIC IMAGING

Title (de)
VERFAHREN ZUR MESSUNG PHYSIKALISCHER EIGENSCHAFTEN VON NUKLEINSÄUREN DURCH MIKROPISCHE ABBILDUNG

Title (fr)
PROCEDE PERMETTANT DE MESURER DES CARACTERISTIQUES PHYSIQUES D'ACIDES NUCLEIQUES PAR IMAGERIE MICROSCOPIQUE

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Abstract (en)
[origin: WO9631522A1] Disclosed is a method for measuring physical characteristics, such as size and weight, of individual molecules. The method involves subjecting a deformable or nondeformable molecule to an external force which causes conformational or positional changes and then measuring these changes. Preferred ways to measure such changes include: 1) determining the rate at which a molecule becomes oriented in a new direction when the direction of the perturbing force is changed, 2) determining the rate at which a deformable molecule returns to a relaxed state after termination of the external force, 3) determining the rate at which a molecule rotates, 4) measuring the length of a molecule when it is partially stretched, or 5) measuring the diameter of a spherical or ellipsoidal molecule. These measurements can be performed by use of a light microscope connected to an image processor or spectroscopic device. The invention is particularly useful for measuring polymeric molecules such as nucleic acids and can be used to determine size and map location of restriction digests.

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