

Improvement in Barcode analysis in Optical DNA mapping

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Optical DNA mapping (ODM), a method of generating sequence-dependent fluorescence “fingerprints” (DNA barcodes), often suffers from captured noisy images due to fluctuation of molecules inside the nanochannel, the concentration variation of dyes, non-uniform illumination, etc. We use efficient noise modelling of fluorescence cameras to generate realistic-looking synthetic barcodes of a given molecule from the database (e.g. λ DNA). These synthetic barcodes act as 'standard candles' to compare the experimental barcodes, leading to improved matching and efficient determination of the molecule species.