Estimation of CYP3A4*1B single nucleotide polymorphism using target-assembled in-situ detection by synthetic DNA-mounted excimers

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Abstract

CYP3A4*1B is a single nucleotide polymorphism of CYP3A4 and is associated with prostate cancer which exhibits higher nifedipine oxidase activity in liver. This research provides details of the effects of structural variation and medium effects for the recently reported split-oligonucleotide (tandem) probe system for excimers-based fluorescence detection of DNA. In this approach the detection system is split at a molecular level into signal-silent components, which must be assembled correctly into a specific 3-dimensional structure to ensure close proximity of the excimer partners and the consequent excimer fluorescence emission on excitation. The model system consists of two 11-mer oligonucleotides, complementary to adjacent sites of a 22-mer DNA target. Each oligonucleotide probeis equipped with functions able to form an excimer on correct, contiguous hybridization. The extremely rigorous structural demands for excimer formation and emission required careful structural design of partners for excimer formation, which are here described. This study demonstrates that the excimer formed emitted at ~480 nm with alarge Stokes shift (~130 - 140 nm)..

Biography:

Abdul M Gbaj is a professor in pharmacy. He would like to explore his range in pharmaceutics research and helps to give suggestions to young aspirants. He likes to teach and currently working as a pharmacy faculty in Medicinal Chemistry, University of Tripoli, Libya..

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