PLP (PCR/LCR/PCR) – Efficient tool for SNP detection

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We used a novel strategy for the detection of Korean-specific mutation in BRCA1 gene. We amplified the genomic regions containing mutation sites by polymerase chain reaction (PCR) to prepare the template for LCR. Then we ligated a primary probe extended by zip-code complementary at the 5/ end with a 3/-biotin modified secondary probe. Depending on the genotype of samples at the mutation site, the nick between the two ligation primers can be sealed in the presence of DNA ligase. Only ligated products can generate fluorescent signal after hybridization on the zip-code microarray followed by staining with streptavidine-cy3. After ligation reaction we performed PCR with the same ligation-cocktails. The non-ligated sample solely produced band at the desired position in agarose gel to indicate the nonligation. This PLP strategy is sufficient to detect SNP in any specific gene without any complex instrumentation.