

Screening of high resolving polymer matrix for genetic analysis based on CE-SSCP

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Capillary electrophoresis-single strand conformation polymorphism (CE-SSCP) analysis is known as a simple and rapid mutation analysis technique. Moreover, several recent studies show that CE-SSCP is also suitable to various genetic analyses for its high sensitivity and great reproducibility with conventional linear polyacrylamide (LPA) blending polymer matrix which used for non-SSCP analysis. However, LPA blending polymer shows limited resolution in several fields such as single nucleotide polymorphism (SNP) analysis, or pathogen detection based on 16S rRNA detection, which demands high resolution.

We chose poly(ethylene oxide)-poly(propylene oxide)-poly(ethylene oxide) tri-block copolymer(EPE), poly vinylalcohol(PVA), non-linear polyacrylamide (PAm), and poly-*N,N*-dimethylacrylamide(PDMA) for candidate polymers. For comparing the polymer matrices, 200~500bp DNA fragments which were selected randomly from *E. coli* genomic DNA were used to determine resolution in each polymer matrices. Among the four candidates, EPE shows the best resolutions between the fragments. The result implies that EPE can be used for SSCP analysis with better resolution than conventional non-denaturing polymer matrix.