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Supplementary Material

Label-free and Sensitive Detection of BRCA1 and TB4 DNA Sequences with Water-Soluble Cationic Polythiophenes

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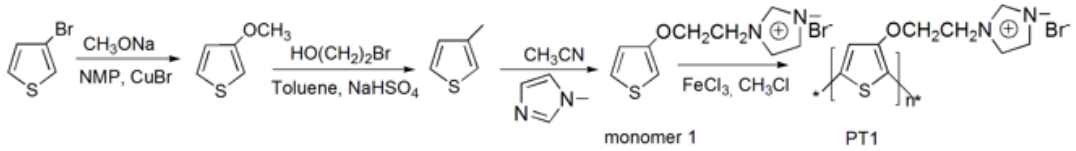
1. Synthetic Route of PT

Compound 1, Compound 2 and PT were prepared according to the literature methods. And the procedure was shown in Scheme S1. The procedure demonstrated the main solvents and reagents.



2. The oligonucleotides used in this study.

ssDNA	*Sequences*	*Length (bp)*	*Pairs of mismatched bases*
BRCA1-1	5'-GAGCATACATAGGGTTTCTCTTGGTTTCTTTGATTATAATTCATAC	*46*	-
BRCA1-2	5'-GTATGAATTATAATCAAAGAAACCAAGAGAAACCCTATGTATGCTC	46	0
BRCA1-3	5'-GTATGAATTATAATCAAAGAAACCAAGAGAAACCCTATGTATGCTG	46	1
BRCA1-4	5'-GTATGAATTATAATCAAAGAAACCAAGAGAAACCCTATGTATGCAG	46	2
BRCA1-5	5'-GTATGAATTATAATCAAAGAAACCAAGAGAAACCCTATGTATGGAG	46	3
TB4-1	5'-ATGTCTGACAAACCGGACATGGCTGAAATCGAAAAATTCG	40	-
TB4-2	5'-CGAATTTTTCGATTTCAGCCATGTCCGGTTTGTCAGACAT	40	0
TB4-3	5'-CGAATTTTTCGATTTCAGCCATGTCCGGTTTGTCAGACAA	40	1
TB4-4	5'-CGAATTTTTCGATTTCAGCCATGTCCGGTTTGTCAGACCA	40	2
TB4-5	5'-CGAATTTTTCGATTTCAGCCATGTCCGGTTTGTCAGAACA	40	3

Table S1. The oligonucleotides used in this study. *BRCA1-1* and *BRCA1-2*, *TB4-1* and *TB4-2* sequences are completely complementary ssDNA respectively. Others are oligonucleotide sequences with 1~3 mismatched bases.