

Electronic Supplementary Information

Mass Spectrometry based Trinucleotide Repeat Sequence detection using Target Fragment Assay

Ting Zhang, Xiang-Cheng Lin, Hao Tang*, Ru-Qin Yu, Jian-Hui Jiang

State Key Laboratory of Chemo/Biosensing and Chemometrics, College of Chemistry
and Chemical Engineering, Hunan University, Changsha 410082, P. R. China

*Corresponding author

Email: haotang@hnu.edu.cn Tel: 86-731-88664085

Fax: 86-731-88821848

Table S1. Sequences of the synthesized oligonucleotides.

Strand	Sequence(5'-3')	CAG Repeat number
Forward primer (P1)	5'- ATGAAGGCCTTCGAGTCCCTCAAGTCC-3'	
Reverse primer (P2)	5'-biotin-CGGTGGCGGCTGTTGCTGCTGCTGCTGCTG-3'	
HTT-10	5'-AGCTGATGAAGGCCTTCGAGTCCCTCAAGTCCTTC (CAG) _n CAACAGCCGCCACCGCCGCCGCCGCCGCC-3'	n=10
HTT-19	5'-AGCTGATGAAGGCCTTCGAGTCCCTCAAGTCCTTC (CAG) _n CAACAGCCGCCACCGCCGCCGCCGCCGCCGCC-3'	n=19
HTT-30	5'-AGCTGATGAAGGCCTTCGAGTCCCTCAAGTCCTTC (CAG) _n CAACAGCCGCCACCGCCGCCGCCGCCGCCGCC-3'	n=30
HTT-40	5'-AGCTGATGAAGGCCTTCGAGTCCCTCAAGTCCTTC (CAG) _n CAACAGCCGCCACCGCCGCCGCCGCCGCCGCC-3'	n=40
HTT-50	5'-AGCTGATGAAGGCCTTCGAGTCCCTCAAGTCCTTC (CAG) _n CAACAGCCGCCACCGCCGCCGCCGCCGCCGCC-3'	n=50
HTT-60	5'-AGCTGATGAAGGCCTTCGAGTCCCTCAAGTCCTTC (CAG) _n CAACAGCCGCCACCGCCGCCGCCGCCGCCGCC-3'	n=60

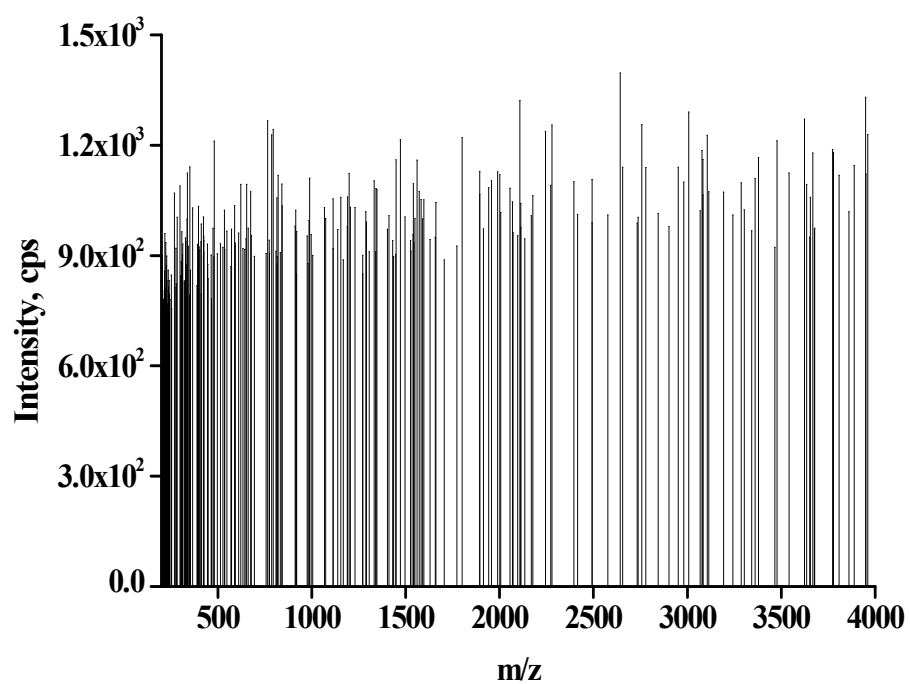


Figure S1. The full scan mass spectrum of PCR amplicons obtained by TFA approach using DNA target HTT-19 (without preliminary acidic degradation). Sample was dissolved in 10 nM ammonium acetate buffer, detected in negative ion mode.

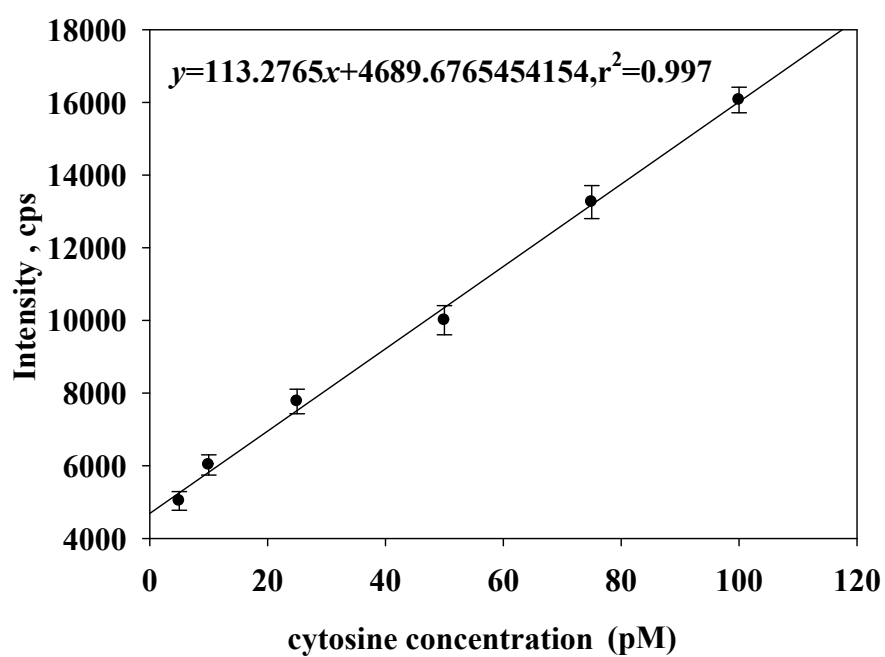


Figure S2. Plot of MS/MS peak areas versus concentrations of DNA target HTT-19 (expressed in cytosine concentration).

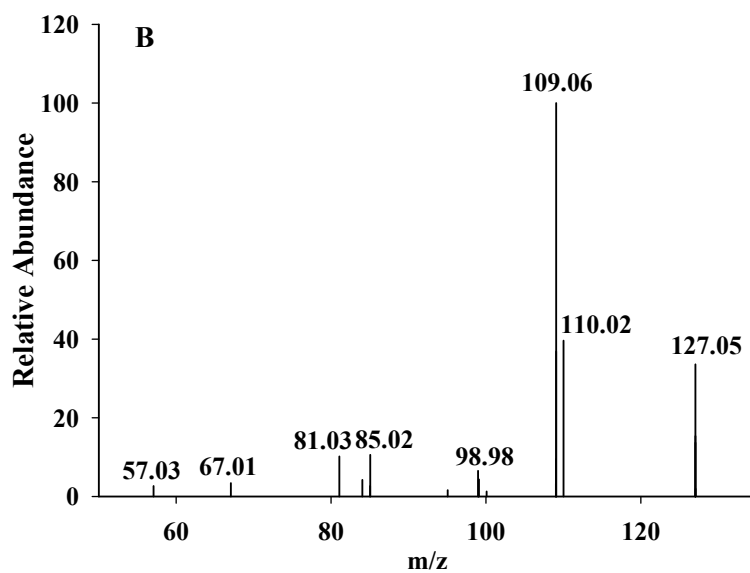
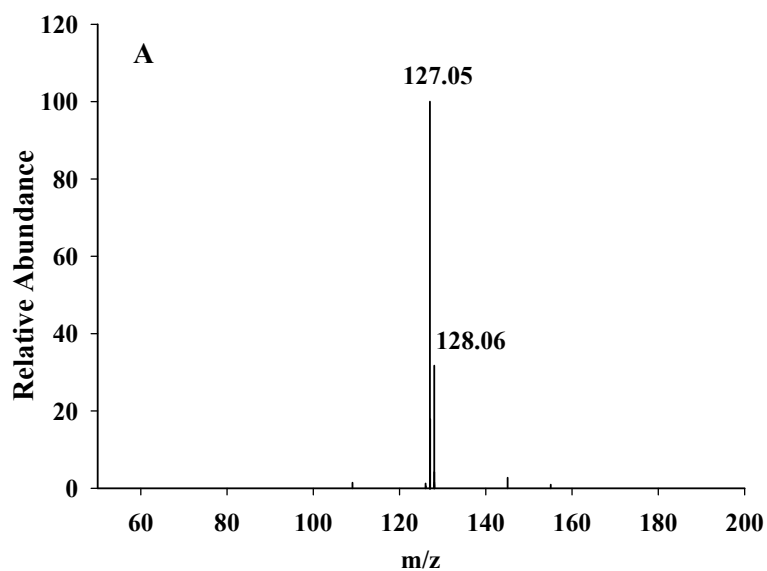


Figure S3. (A) Full scan mass spectrum of thymine. (B) Product ion scan spectrum of cytosine using protonated molecular ion of thymine (m/z 127.05) as precursor ion.

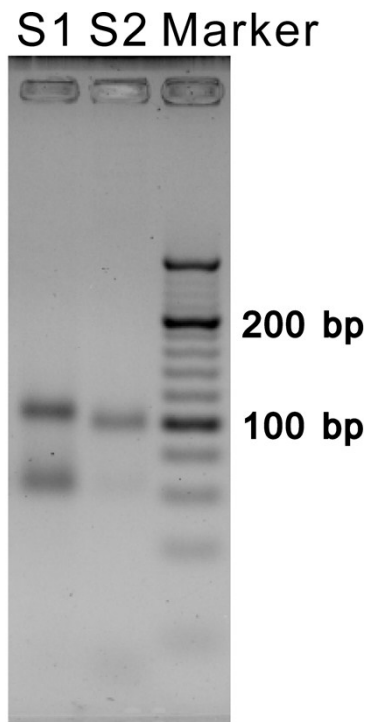


Figure S4. Agarose gel electrophoresis image of PCR products using genomic DNA extracted from two blood samples of two healthy people. Lane 1: sample 1 (S1); Lane 2: sample 2 (S2); Lane Marker is the DNA size marker.