

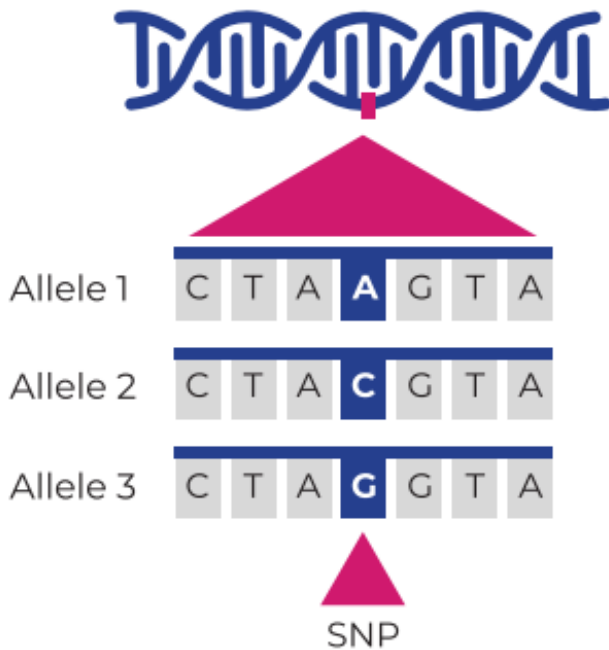
PCR

Diagnostic kits

Single Nucleotide Polymorphisms



Single Nucleotide Polymorphisms



A Single Nucleotide Polymorphisms (SNP) is a variation in a single nucleotide that occurs at a specific position in the DNA, and each possible sequence (allele) is present in at least 1 percent of people

- SNPs are the most abundantly found form of DNA variation in the human genome
- Some of SNPs are involved in regulating several cellular/physiological processes ranging from gene regulation to disease development
- Identification of SNPs in the laboratory diagnostics can be used to determine the risk of multifactorial disorders
- The presence of SNPs can also affect the metabolism of drugs: so the detection of SNPs may be useful in predicting the response to drug therapy, dose selection, and in the prediction of the therapy success

RealBest kits for SNPs detection

Kit for DNA extraction

Sample type:

- Buccal swabs
- Whole blood

DNA extraction

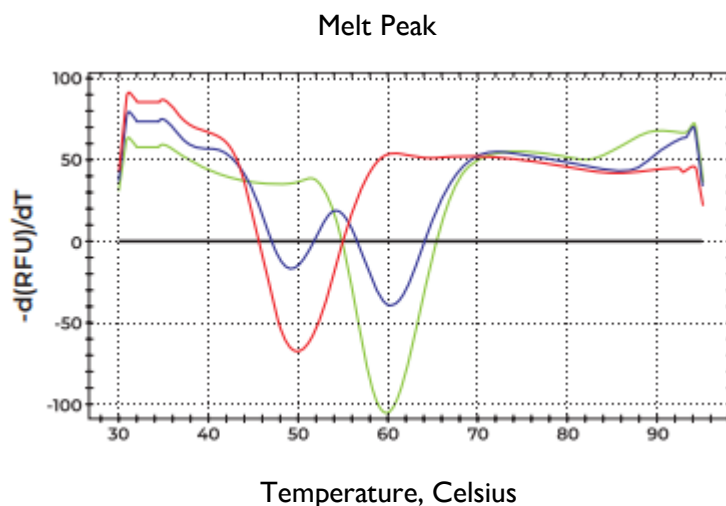
duration:

- 20-25 min



Kits for SNPs detection

- Method: asymmetric PCR with following melting curve analysis of PCR products
- Multiplex PCR: Each SNP is detected within one fluorescent channel; different alleles resulted in different melting temperatures
- Short analysis duration: 80-90 min



SNP: MTHFR C677T

- Allele C – $T_m = 50^\circ\text{C}$
- Allele T – $T_m = 60^\circ\text{C}$
- Heterozygote – $T_m = 49+60^\circ\text{C}$

An example of *MTHFR* C677T genotyping by melting curve analysis using RealBest kits for SNPs detection.

Features of RealBest kits

- Easy-to-use: just add a sample of eluted DNA into tube with Lyophilized Ready Master Mix
- Multiplex PCR: detection of two or three SNPs in one test tube
- Compatible thermal cyclers: CFX96 (Bio-Rad, USA), Gentier 96E/R (Xi'an TianLong, Science and Technology Co., Ltd., China)
- Convenience of storage and transportation: no freezing required, transportation up to 26 °C for no more than 10 days is acceptable

Kits for DNA extraction

Cat. №.	Kit Name	Number of tests
8845	RealBest-Genetics DNA-express A kit for manual DNA extraction from whole blood and buccal epithelium	50
8846	RealBest GenMag A kit for automated DNA extraction from whole blood	96

Kits for SNP detection by real-time PCR

Cat. №.	Kit Name	Format	Detection channels	Number of tests
Thrombophilia and hyperhomocysteinemia				
3801	RealBest-Genetics Hemostasis (12) Gene: polymorphism – <i>F2:20210G/A; F5:1691G/A; F7:10976G/A; F13A1: c.103G/T; FGB:-455G/A; ITGA2:807C/T; ITGB3:1565T/C; PAI-1:- 6755G/4G; MTR:2756 A/G; MTRR:66 A/G; MTHFR:677C/T; MTHFR:1298A/C</i>	Str	FAM, ROX, HEX	48
3802 CE	RealBest-Genetics Hemostasis (F2/F5) Gene: polymorphism – <i>F2:20210G/A; F5:1691G/A</i>	Str	FAM, HEX	48
3803 CE	RealBest-Genetics Hemostasis (MTR/MTRR/MTHFR) Gene: polymorphism – <i>MTR:2756A/G; MTRR:66A/G; MTHFR:677C/T; MTHFR:1298A/C</i>	Str	FAM, ROX, HEX	48
3831 CE	RealBest-Genetics Hemostasis FGB/F13A1 Gene: polymorphism – <i>FGB: -455G/A; F13A1: c.103G/T</i>	Str	FAM, ROX	48
3832 CE	RealBest-Genetics Hemostasis ITGA2/F7 Gene: polymorphism – <i>ITGA2:807C/T; F7:10976G/A</i>	Str	FAM, ROX	48
3833 CE	RealBest-Genetics Hemostasis PAI-1/ITGB3 Gene: polymorphism – <i>PAI-1:-6755G/4G; ITGB3:1565T/C</i>	Str	FAM, HEX	48
Metabolic disorder				
3804 CE	RealBest-Genetics Hemostasis MCM6 Gene: polymorphism – <i>MCM6: -13910C/T</i>	Str	FAM	48
Cardiovascular diseases				
3805	RealBest-Genetics NOS3 T(-786)C/G894T Gene: polymorphism – <i>NOS3: T(-786)C; G894T</i>	Str	FAM, ROX	48
3806	RealBest-Genetics ACE Del287/AGT T704C Gene: polymorphism – <i>ACE: Del287; AGT: T704C</i>	Str	FAM, ROX	48
3817	RealBest-Genetics CYP11B2 C(-344)T/ADD1 G1378T Gene: polymorphism – <i>CYP11B2: C(-344)T; ADD1: G1378T</i>	Str	FAM, HEX	48
3818	RealBest-Genetics AGT C521T/AGTR1 A1166C Gene: polymorphism – <i>AGT: C521T; AGTR1: A1166C</i>	Str	FAM, ROX	48
3819	RealBest-Genetics GNB3 C825T/AGTR2 G1675A Gene: polymorphism – <i>GNB3: C825T; AGTR2: G1675A</i>	Str	FAM, ROX	48

Kits for SNPs detection by real-time PCR

Cat. №.	Kit Name	Format	Detection channels	Number of tests
Predicting hepatitis C treatment success				
3811 CE	RealBest-Genetics Interleukin 28B Gene: polymorphism – <i>IL28B</i> : <i>rs12979860 C/T</i> ; <i>rs8099917 T/G</i>	Str	FAM, ROX	48
Reproductive function				
3814 CE	RealBest-Genetics AZF microdeletions Gene: polymorphism – <i>AZFa locus</i> : <i>sY-84</i> , <i>sY-86</i> ; <i>AZFb locus</i> : <i>sY-127</i> , <i>sY-134</i> ; <i>AZFc locus</i> : <i>sY-254</i> , <i>sY-255</i>	Str	FAM, ROX	48
Hereditary mammary gland and ovarian cancer				
3807	RealBest-Genetics BRCA (BRCA1 185delAG/3875del4) Gene: polymorphism – <i>BRCA1</i> : <i>185delAG</i> ; <i>3875del4</i>	Str	FAM, ROX	48
3808	RealBest-Genetics BRCA (BRCA1 3819del5/T300G) Gene: polymorphism – <i>BRCA1</i> : <i>3819del5</i> ; <i>T300G</i>	Str	FAM, ROX	48
3809	RealBest-Genetics BRCA (BRCA1 2080delA(insA)/BRCA2 6174delT) Gene: polymorphism – <i>BRCA1</i> : <i>2080delA (insA)</i> ; <i>BRCA2</i> : <i>6174delT</i>	Str	FAM, HEX	48
3841	RealBest-Genetics BRCA (BRCA1 4153delA/5382insC) Gene: polymorphism – <i>BRCA1</i> : <i>4153delA</i> ; <i>5382insC</i>	Str	FAM, ROX	48
3810	RealBest-Genetics NBS1 Gene: polymorphism – <i>NBS1</i> : <i>657del5</i>	Str	FAM	48
3816	RealBest-Genetics CHEK2 Gene: polymorphism – <i>CHEK2</i> : <i>1100delC</i> ; <i>IVS2+1G>A</i>	Str	HEX, ROX	48
Hereditary HFE-associated hemochromatosis (Hemochromatosis type I)				
3822 CE	RealBest-Genetics Hemochromatosis (HFE 187 C/G) Gene: polymorphism – <i>HFE</i> : <i>187 C/G (His63Asp)</i>	Str	ROX	48
3823 CE	RealBest-Genetics Hemochromatosis (HFE 193 A/T) Gene: polymorphism – <i>HFE</i> : <i>193 A/T (Ser65Cys)</i>	Str	FAM	48
3824 CE	RealBest-Genetics Hemochromatosis (HFE 845 G/A) Gene: polymorphism – <i>HFE</i> : <i>845 G/A (Cys282Tyr)</i>	Str	FAM	48
Pharmacogenetics of warfarin				
3827 CE	RealBest-Genetics Warfarin (CYP2C9*2/CYP2C9*3) Gene: polymorphism – <i>CYP2C9</i> : <i>430 C/T</i> ; <i>1075 A/C</i>	Str	FAM, ROX	48
3828 CE	RealBest-Genetics Warfarin (VKORC1/CYP4F2*3) Gene: polymorphism – <i>VKORC1</i> : <i>1173 C/T</i> ; <i>CYP4F2</i> : <i>1297 C/T</i>	Str	HEX, ROX	48
3829 CE	RealBest-Genetics Warfarin (GGCX) Gene: polymorphism – <i>GGCX</i> : <i>rs11676382 C/G</i>	Str	FAM	48
3830 CE	RealBest-Genetics Warfarin (CYP2C9*5/CYP2C9*6) Gene: polymorphism – <i>CYP2C9</i> : <i>1080 C/G</i> ; <i>818 delA</i>	Str	HEX, ROX	48
Autoimmune disease				
3836 CE	RealBest-Genetics HLA-B*27 Gene: polymorphism – <i>HLA-B*27</i>	Str	FAM, ROX	48
Gilbert's syndrome				
3813 CE	RealBest-Genetics UGT1A1 Gene: polymorphism – <i>UGT1A1</i> : <i>5TA/6TA/7TA/8TA</i>	Str	FAM, HEX	48

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