

Supplementary material

A Direct Isothermal Amplification System Adapted for Rapid SNP Genotyping of Multifarious Sample Types

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Table S1. Primer sequences used for sequencing and Direct-LAMP (M=mutation type, WT=wild type)

Allele	Application	Primer	Sequence (5'-3')	
<i>MTHFR</i> C677T	Sequencing	Forward	CCCAGTCCCTGTGGTCTCTTC	
		Reverse	CAACAAACCCCTCAACAGACT	
	Direct-LAMP	FIP-WT	GCTCCCGCAGACACCTTCTCCTGGAGCTTTGAGGCTGACC	
		FIP-M	ACTCCCGCAGACACCTTCTCCTGGAGCTTTGAGGCTGACC	
		BIP-WT	CCGATTTTCATCATCACGCAGCTTGCCTTCACAAAGCGGAAG	
		BIP-M	TCGATTTTCATCATCACGCAGCTTGCCTTCACAAAGCGGAAG	
		F3	GTTACCCCAAAGGCCACC	
		B3	AGTGATGCCCATGTCGGT	
	<i>ALDH2</i> Glu504Lys	Sequencing	Forward	GTAACCCATAACCCCAAGAGT
			Reverse	GCACGTCCCTCAGTATTTCTCAT
Direct-LAMP		FIP-WT	CAGTGTATGCCTGCAGCCCGTATAACAAGATGTCGGGGAGTGG	
		FIP-M	TAGTGTATGCCTGCAGCCCGTATAACAAGATGTCGGGGAGTGG	
		BIP-WT	GAAGTGAAAACACTGTGAGTGTGGCAGCAGACCCTCAAGCC	
		BIP-M	AAAGTGAAAACACTGTGAGTGTGGCAGCAGACCCTCAAGCC	
		F3	GATGTGTTTGGAGCCAGT	
		B3	CCCAACAGACCCCAATCC	

Table S2. Genotyping results and frequency of whole blood and dried blood spot samples of *MTHFR* C677T polymorphism (type-specific concordance between Direct-LAMP and sequencing)

Direct-LAMP (blood, n=50)	Direct-LAMP (dried blood spot, n=50)				Total	Sequencing (n=50)				Total	Agreement	Frequency
	CC	CT	TT	Discrepant		CC	CT	TT	Discrepant			
CC	19	0	0	0	19	19	0	0	0	19	100%	38% (F1)
CT	0	20	0	0	20	0	20	0	0	20	100%	40% (F2)
TT	0	0	11	0	11	0	0	11	0	11	100%	22% (F3)
Total	19	20	11	0	50	19	20	11	0	50	100%	100%

Table S3. Genotyping results and frequency of buccal swab and saliva samples of *ALDH2* Glu504Lys polymorphism (type-specific concordance between Direct-LAMP and sequencing)

Direct-LAMP (saliva, n=50)	Direct-LAMP (buccal swab, n=50)					Sequencing (n=50)					Agreement	Frequency
	GG	GA	AA	Discrepant	Total	GG	GA	AA	Discrepant	Total		
GG	17	0	0	0	17	17	0	0	0	17	100%	34% (F1)
GA	0	32	0	0	32	0	32	0	0	32	100%	64% (F2)
AA	0	0	1	0	1	0	0	1	0	1	100%	2% (F3)
Total	17	32	1	0	50	17	32	1	0	50	100%	100%

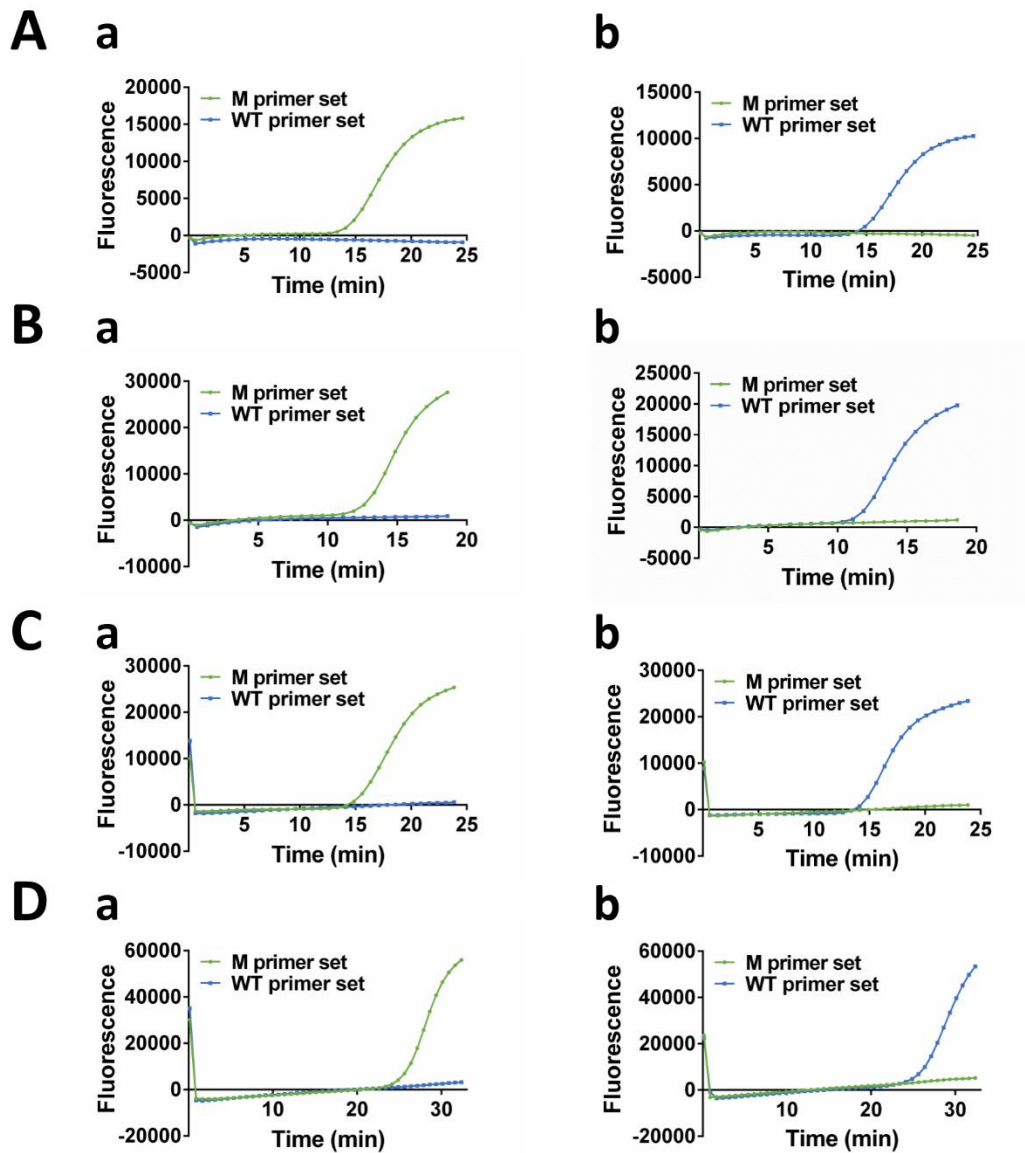


Fig. S1. Fluorescence curve of Direct-LAMP performed with (A) whole blood samples ((a) homozygous mutation type, (b) wild type), (B) dried blood spot samples ((a) homozygous mutation type, (b) wild type), (C) saliva samples ((a) homozygous mutation type, (b) wild type) and (D) buccal swab samples ((a) homozygous mutation type, (b) wild type) for *MTHFR* C677T genotyping.

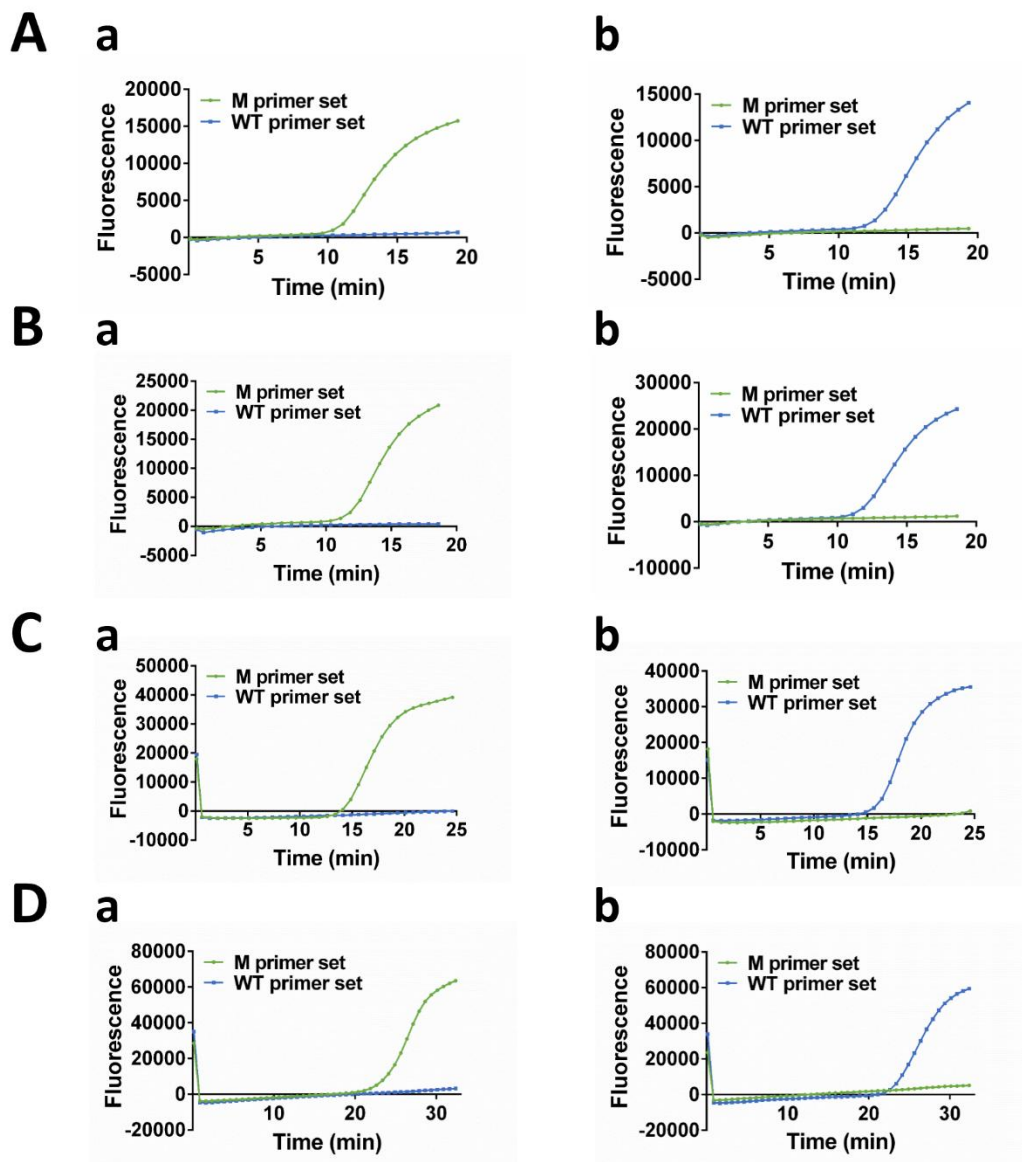


Fig. S2. Fluorescence curve of Direct-LAMP performed with (A) whole blood samples ((a) homozygous mutation type, (b) wild type), (B) dried blood spot samples ((a) homozygous mutation type, (b) wild type), (C) saliva samples ((a) homozygous mutation type, (b) wild type) and (D) buccal swab samples ((a) homozygous mutation type, (b) wild type) for *ALDH2* Glu504Lys genotyping.