Cardiovascular Diseases

Cat. No	Clinical Application	Applicable Drug(s) or Risk Gene	Target Gene Locus	Technology	Specification
SNP-U6	Hypertension	Calcium Channel Blockers	CYP3A5*3 c.6986 A>G,NPPA c.2238 T>C	Ligase Sequencing	20T/Kit
		Diuretic	NPPA c.2238 T>C		
		Angiotensin II Receptor Blockers	AGTR1 c.1166 A>C,CYP2C9 c.1075 A>C		
		Angiotensin Converting Enzyme Inhibitor	ACE (I/D)		
		Beta Blocker	ADRB1 c.1165 G>C,CYP2D6 c.100 C>T		

Psychoneurology

Cat. No	Clinical Application	Applicable Drug(s) or Risk Gene	Target Gene Locus	Technology	Specification
SNP-U3	Antidepresant	Antidepressant Medication	CYP2C19*2 c.681 G>A,CYP2C19*3 c.636 G>A, CYP2C19*17 c.-806 C>T	Ligase Sequencing	20T/Kit
SNP-U8		CNorimipramine, Nefazodone, Paroxetine or Venlafaxine	ABCB1 c.2677 T>G/A		
		Nortriptyline, Venlafaxine	ABCB1 c.3435 C>T		
SNP-U9	Antidepresant/ Antischizo-phrenics	Paroxetine, Fluvoxamine, Venlafaxine, Amitriptyline, Nortriptyline, Imipramine, Chlorimipramine, Doxepin, Desipramine,Trimipramine	CYP2D6*4 c.1846 G>A, CYP2D6*10 c.100 C>T, CYP2D6*14 c.1758 G>A, CYP2D6*41 c.2988 G>A		
SNP-U31	Antidepresant	Antidepressive Drugs	U3 (CYP2C19*2 c.681 G>A, CYP2C19*3 c.636 G>A, CYP2C19*17 c.-806 C>T) U8 (ABCB1 c.2677 T>G/A,ABCB1 c.3435 C>T) U9 (CYP2D6*4 c.1846 G>A, CYP2D6*10 c.100 C>T, CYP2D6*14 c.1758 G>A, CYP2D6*41 c.2988 G>A)		
SNP-U21	Antischizo-phrenics	Antischizophrenia Drugs	MC4R g.57882787C>A, CYP1A2 g.74749576C>A		
SNP-U20	Anesthesia	Fentanyl, Sufentanil, Remifentanil, Alfentanil	OPRM1 c.118 A>G, COMT c.472 G>A, ABCB1 c.3435 T>C		
SNP-U13	Antiepileptic	Carbamazepine	HLA-B*1502		
SNP-U28		Sodium Valproate	CYP2C9 c.1075 A>C, POLG c.3708 G>T, POLG c.3428 A>G		
SNP-U29		Levetiracetam	SCN1A c.3199 G>A		

Rheumatoid Immunity

Cat. No	Clinical Application	Applicable Drug(s) or Risk Gene	Target Gene Locus	Technology	Specification
SNP-U14	Gout	Allopurinol	HLA-B*5801	Ligase Sequencing	20T/Kit
SNP-U16	Immunosup-pressant	Tacrolimus	CYP3A5 c.6986 A>G		
SNP-U18	Autoimmune Disease	Imuran	NUDT15 c.415 C>T,TPMT c.238 G>C, TPMT c.460 G>A,TPMT c.719 A>G		
SNP-U22	Rheumatoid Arthritis	Methotrexate	MTHFR c.677 C>T,MTHFR c.1298 A>C, ABCB1 c.3435 T>C,SLC19A1 c.80 A>G, ATIC c.675 T>C		

Endocrine Drugs

Cat. No	Clinical Application	Applicable Drug(s) or Risk Gene	Target Gene Locus	Technology	Specification
SNP-U11	Diabetes	Metformin	C1orf65 c.175-5285 C>A	Ligase Sequencing	20T/Kit
		Sulfonylureas	KCNJ11 c.67 T>C, CYP2C9*3 c.1075 A>C		
		Thiazolidinedione (TZDs)	PPARG c.34 C>G		
		Glinides	SLC30A8 c.826 C>T		
		Oral Hypoglycemic Agents (OHA)	IRS1 c.2911 G>A		

Oncology

Cat. No	Clinical Application	Applicable Drug(s) or Risk Gene	Target Gene Locus	Technology	Specification
SNP-U9	Breast Cancer	Tamoxifen	CYP2D6*4 c.1846 G>A, CYP2D6*10 c.100 C>T, CYP2D6*14 c.1758 G>A, CYP2D6*41 c.2988 G>A	Ligase Sequencing	20T/Kit
SNP-U19	Colorectal Cancer	Irinotecan	UTG1A1*6 c.211 G>A, UGT1A1*28 c.-54_-53insAT, UGT1A1*93 c.862-9898 G>A		
SNP-U22	Acute Lymphocytic Leukemia	Methotrexate	MTHFR c.677 C>T,MTHFR c.1298 A>C, ABCB1 c.3435 T>C,SLC19A1 c.80 A>G, ATIC c.675 T>C		

Fungal Infection

Cat. No	Clinical Application	Applicable Drug(s) or Risk Gene	Target Gene Locus	Technology	Specification
SNP-U3	Fungal Infection	Voriconazole	CYP2C19*2 c.681 G>A, CYP2C19*3 c.636 G>A, CYP2C19*17 c.-806 C>T	Ligase Sequencing	20T/Kit

Disease Risk Genes

Cat. No	Clinical Application	Applicable Drug(s) or Risk Gene	Target Gene Locus	Technology	Specification
SNP-U5	Liver Injury	Nitroglycerin	ALDH2 c.1510 G>A	Ligase Sequencing	20T/Kit
SNP-U24	Senile Dementia	Alzheimer's Disease Risk Genes	ApoE c.388 T>C, ApoE c.526 C>T		
SNP-U25	Thrombophilia	Thrombophilia Risk Genes	F V c.1601 G>A,F II c.*97 G>A, SERPINE1 c.-820~819insG, MTHFR c.677 C>T,MTHFR c.1298 A>C, F XI c.1481~1188 C>T		
SNP-U27	Apoplexy	Stroke Risk Genes	MTHFR c.677 C>T		
SNP-U32	Gout	Rosuvastatin	ABCG2 c.421 C>A		

Digestive system disease

Cat. No	Clinical Application	Applicable Drug(s) or Risk Gene	Target Gene Locus	Technology	Specification
SNP-U3	Proton Pump Inhibitor	Proton Pump Inhibitors	CYP2C19*2 c.681 G>A, CYP2C19*3 c.636 G>A, CYP2C19*17 c.-806 C>T	Ligase Sequencing	20T/Kit
SNP-U17	Helicobacter Pylori	Clarithromycin	23S rRNA c.2142 A>G, 23S rRNA c. 2143 A>G, 23S rRNA c.2182 T>C		
		Metronidazole	rdxA c.148 C>T,rdxA c.184 T>G, rdxA c.616 G>A		
		Amoxicillin	PBP1b c.1667 C>G, PBP1b c.1684 A>G, PBP1b c.1777 A>G		
		Levofloxacin	gyrA c.261 C>G/A, gyrA c.271 G>A/T, gyrA c.272 A>G		
		Furazolidone	Pord c.353 G>A, Pord c.356 A>G, Pord c.357 C>T, Oord c.41 A>G, Oord c.122 A>G, Oord c.349 C>A/G		

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August 13, 2024 / Version 2.0

Bring Technology to Life

TIAN LONG

Precision Medicine

Tianlong Personalized Medication Solution

Based on the ligase sequencing method, Tianlong personalized medication solution is designed to provide genetic clues to guide rational drug dosing and to reduce adverse drug reactions in clinical practice with its exclusive pharmacogenomic reagents and the Fascan 48E multi-channel fluorescence quantitative analyzer.

PHARMACOGENOMICS

Adverse drug reactions (ADRs)

Adverse drug reactions (ADRs) are one of the most important factors affecting the application of medicine and the corresponding treatment efficacy and therapeutic outcomes. As documented by WHO and other related research, over 4.5 million clinical visits annually are related to ADRs, and a relatively large amount of ADR-induced hospital admissions in both adults and pediatric patients are considered serious or life threatening. Of all factors causing ADRs, about 60% of differences in drug responses in individuals have been found to be correlated with genetic factors.

Drug-gene interaction patterns

Genetic variations or the altered function of related genes can result in big differences in the metabolic capability of drugs in different people. Depending on the varied metabolic capabilities in individuals, people may have huge differences in plasma concentration and responses toward ADRs after taking the same drug of the same dosage.

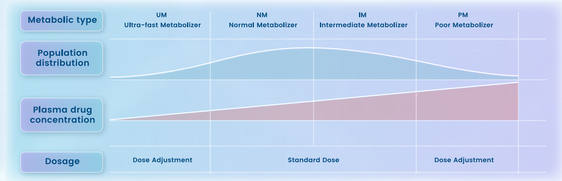


Figure 1. Distribution of metabolic types in population

Pharmacogenomics & drug responses

To tailor medical treatment to each person or to a group of people, the concept of pharmacogenomics has been carried out and it looks at how your DNA affects the way you respond to drugs.

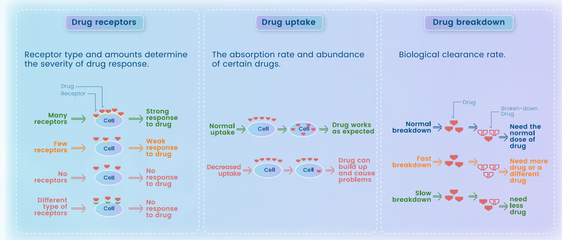


Figure 2. Three main interaction patterns of DNA and drugs

PERSONALIZED MEDICINE

Right drug with right dose,
at the right time to the right patient

Different from conventional therapy offering a "one-size-fits-all" approach, personalized medicine is tailored to an individual's health and needs. It can predict whether a medical treatment will be safe or effective for a patient, based on the unique genetic profile in individuals. It can not only minimize side effects and guarantee a more successful result, but also reduce financial burden for both patients and medical institutions.

Tianlong personalized medication solutions will help clinicians to conduct safe, effective and economical therapeutic solutions to patients with full consideration of genomic profiles, providing quality medical service and effective treatment.

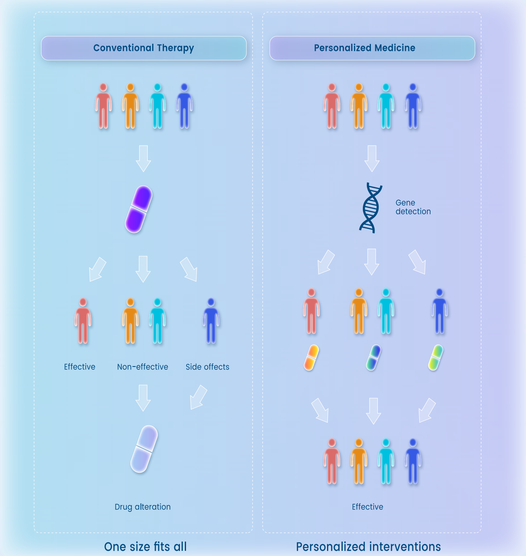


Figure 3. Schematic diagrams showing the different therapeutic strategies conducted by conventional method and personalized medicine, respectively.

FEATURES

Accurate Result

Internal control can monitor the whole detection procedure and ensure the accuracy of the detection results reaching to over 98%.

High Efficiency

- Intelligent software, one PC software controls multiple instrument;
- Results are available in 70 mins after loading samples.

User Friendly

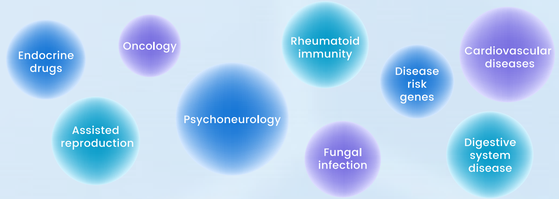
- Pre-packaged reagents;
- DNA extraction-free;
- Easy to operate and no requirements for specialized equipment or techniques;

Integrated Solution

Tianlong integrated solution from devices to reagents can ensure great compatibility and minimized systematic errors.

TEST PORTFOLIO

Tianlong offers a wide range of pharmacogenomics reagents to identify potencial disease risk genes & guide rational medication of various drugs to improve clinical efficacy and prevent the occurrence of adverse drug effects. The reagents can be used in various clinical applications such as assisted reproduction, psychoneurology, cardiovascular diseases, etc.



ASSAY WORKFLOW

1 Sample Collection — 2 Sample Detection — 3 Analysis and Report

*Detection directly after sample collection and report in about 70 min.

COMPATIBLE INSTRUMENT

Fascan 48E

Multi-channel fluorescence quantitative analyzer

Ensure accurate detection for guiding personalized medicine

The Tianlong Fascan 48E Multi-channel fluorescence quantitative analyzer is easy to operate with a 7-inch color LCD touch screen. It is designed for compatibility with Tianlong pharmacogenomic reagents for personalized medicine. With advanced temperature control system and fluorescence detection technology, Fascan 48E can provide fast and accurate results to help treatment in clinical practice.

FEATURES

Instant result analysis
Compatible with Tianlong pharmacogenomic reagents to ensure results accuracy; Detection directly after sample collection and report in about 70 min.

48 samples to be scanned in 2s
With 4 fluorescence channels to detect multiple targets; 2s for all 48 wells of fluorescence scanning, which improves efficiency for lab professionals.

Efficient temperature control
Temperature control ranges from 40.0℃-99.0℃ with temperature accuracy ≤ 0.3℃ (40.0℃-99.0℃) and ≤ 1℃(4.0℃-39.9℃).

Intuitive software design
Intuitive software design and user-friendly interface make it easy to operate even for first-time users. With remarkable software for automatic interpretation of results; Reports are easy to read

User-friendly and convenient
1)Two configurations: 7-inch LCD touchscreen operation or PC software control via connection;2)Noise-free design with running noise≤65 dB; 3)Power failure protection design

Specifications

Model	Fascan 48E
Throughput	48
Fluorescence Channels	4
Fluorescence Scanning Time	2s
Dye Compatibility	Channel 1: FAM, SYBR Green Ⅰ etc. Channel 2: HEX, VIC, TET, JOE,etc. Channel 3: Texas Red, ROX,etc. Channel 4: Cy5,etc.
Lightsource	High-brightness, long-life, maintenance-free LED light source
Detector	Photodiode (PD)
Temperature control range	From 4.0°C to 99.0°C
Accuracy of Thermal Control	≤ 0.3℃(40.0℃-99.0℃)； ≤ 1℃(4.0℃-39.9℃)
Sample Testing Repeatability	CV<0.5%
Sample Testing Linearity	|r| ≥ 0.990
Control Modes	Mode 1:7.0 inch touch screen Mode 2: PC software
Data Storage and Transmission	Up to 1000 programs can be stored in machine
Power Failure Protection	Automatically start running experiments after power supply
Communication Specification	Network port: TCP/IP protocol; Ethernet connection;
Suitable Consumables	0.2mL transparent single tubes　0.2mL transparent 8-strip tubes
Instrument Dimensions	400mm(L)x260mm(W)×260mm(H)
Weight	11kg
Power Supply and Power Consumption	AC 220V± 10%, 50Hz; 600VA
Running Noise	<65 dB

PHARMACOGENOMIC REAGENTS

Assisted Reproduction

Cat. No	Clinical Application	Applicable Drug(s) or Risk Gene	Target Gene Locus	Technology	Specification
SNP-U1	Folic Acid	Folic Acid	MTHFR c.677 C>T, MTHFR c.1298 A>C, MTRR c.66 A>G	Ligase Sequencing	20T/Kit

Cardiovascular Diseases

Cat. No	Clinical Application	Applicable Drug(s) or Risk Gene	Target Gene Locus	Technology	Specification
SNP-U2	Anticoagulation	Warfarin	CYP2C9*3 c.1075 A>C,CYP2C9*2 c.430 C>T, CYP4F2*3 c.1297 G>A,VKORC1 c.-1639 G>A	Ligase Sequencing	20T/Kit
SNP-U3	Antiplatelet	Clopidogrel	CYP2C19*2 c.681 G>A,CYP2C19*3 c.636 G>A, CYP2C19*17 c.-806 C>T		
SNP-U7		Aspirin	ITGB3 c.176T>C,LTC4S c.-444A>C, PEAR1 c.-9+3996 G>A,PTGS1 c.-842A >G, GPIBA c. 482C>T		
SNP-U4	Lipid Lowering	Statins	ApoE c.388 T>C,ApoE c.526 C>T, SLCO1B1 c.388 A>G,SLCO1B1 c.521 T>C		
SNP-U32		Rosuvastatin	ABCG2 c.421 C>A		
SNP-U5	Angina Pector	Nitroglycerin	ALDH2 c.1510 G>A		