

RIDS panel

For the screening of susceptibility to respiratory infectious diseases

RIDS panel

RIDS panel (Respiratory Infectious Diseases Susceptibility) is a kit designed for large population screening through a molecular protocol based on NGS technologies. The resulting genetic profile evaluates both genetic variants in the infection pathway (predisposition or protection against infection), and variants of the genes involved in the immune response to infection (predisposition or protection against a worse outcome).

The kit is validated for analysis of DNA extracted from different body tissues (blood, saliva, etc.).

RIDS panel kit contains all reagents required for the preparation of a specific bidirectional library of amplicons designed for the NGS analysis using Illumina or Ion Torrent sequencers.

RIDS solution

RIDS panel (Respiratory Infectious Diseases Susceptibility) is a kit designed for large population screening through a molecular protocol based on NGS technologies. The resulting genetic profile evaluates both genetic variants in the infection pathway (predisposition or protection against infection), and variants of the genes involved in the immune response to infection (predisposition or protection against a worse outcome).

The kit is validated for analysis of DNA extracted from different body tissues (blood, saliva, etc.).

RIDS panel kit contains all reagents required for the preparation of a specific bidirectional library of amplicons designed for the NGS analysis using Illumina or Ion Torrent sequencers.

WORKFLOW

The RIDS panel kit is part of a DNA-to-variant solution that offers streamlined content, easy-to-perform library preparation, push-button sequencing systems, and simplified data analysis.

Library preparation follows a straightforward, PCR-based protocol that can be completed in as little as 5 hours, with < 1 hours hands-on time. Resulting libraries can be normalized, pooled, and then loaded for sequencing.

Data analysis

First step of data analysis is performed with our proprietary platform 4eVAR.

Table 1: List of hotspots in RIDS panel

	gene	RSID	
	ABO (depends on group)		rs657152
susceptibility/resistance	aspecific	DDP4 (associated with resistance)	rs13015258 rs117888248 rs116302758 rs56179129 rs115450134
		CD147 (BSG)	rs201850688 rs11551906 rs144824657 rs41276870
		CCR5 (associated with resistance)	rs333
		ACE1	rs4341
	specific for COVID19	ACE2 (associated with resistance to infection)	K31R, N33I, H34R, E35K, E37K, D38V, Y50F, N51S, M62V, K68E, F72V, Y83H, G326E, G352V, D355N, Q388L, and D509Y
		TMPRSS2 (associated with increased susceptibility)	rs2070788 rs383510 rs200291871 rs75603675 rs61735791 rs114363287 rs12329760
	GWAS	GLL5, GNAZ, RSPH14, RAB36 and BCR	rs73166864
		IVNS1ABP, SWT1	rs6668622
	outcome (associated with worst prognosis)	ApoE	rs429358-C-C (e4e4)
		IFITM3	rs12252 rs6598045
SLC6A20, LZTFL1, CCR9, FYCO1, CXCR6, XCR1		rs11385942 rs73064425	
OAS3		rs10735079	
TMEM189-UBE2V1		rs6020298-A	
DPP9		rs2109069	
PCSK3 (associate with)		rs16944971 rs780909157 rs201551785 rs769208985 rs1236237792	
SRRM1,IVNS1ABP (hospitalization)		rs111972040	



Figure 1: workflow

RIDS panel

For the screening of susceptibility to respiratory infectious diseases

Validation

To demonstrate assay capabilities, clinical samples were run in a clinical setting. DNA quality and quantity of the libraries prepared were verified using Qubit and Agilent Bioanalyzer.

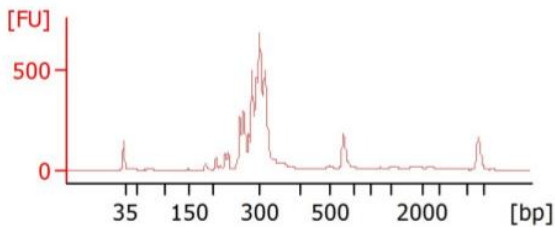


Figure 2. RIDS panel first PCR bioanalyzer profile

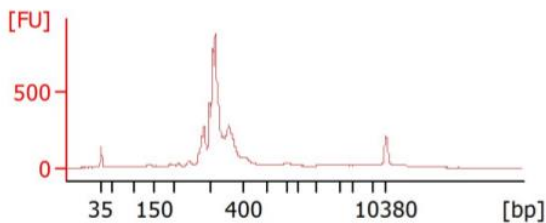


Figure 3. RIDS panel bioanalyzer profile

References

1. Anastassopoulou C et al, Human Genomics 2020;
2. Pairo-Castineira et al, Nature 2020;
3. Ellinghaus et al, Nature 2020;
4. Zhang et al, Science 2020

SAMPLE PER RUN

Instrument	Sample per run
MiSeq Nano Kit v2 (300-cycles)	2
MiSeq Nano Kit v2 (500-cycles)	2
MiSeq Micro Kit v2 (300-cycles)	8
MiSeq Kit v2 (300-cycles)	32
MiSeq Kit v2 (500-cycles)	32
MiSeq Kit v3 (600-cycles)	48
MiniSeq Mid Output Kit (300-cycles)	16
MiniSeq High Output Kit (300-cycles)	48
iSeq 100 i1 kit (300-cycles)	8
NextSeq 550 Mid-Output Kit	288
NextSeq 550High-Output Kit	854
Ion 314™ Chip	8
Ion 316™ Chip	36
Ion 318™ Chip/Ion 520™ Chip	80
Ion 530™ Chip	>96
Ion PI™ Chip/Ion 540™ Chip	>96

**the maximum number of samples per cartridge/chip estimated assuming an average depth of 300x. The optimal number of samples must be empirically determined on local setups.*

Ordering Information

Product	REF
RIDS panel	H1080-16 (16 test)
RIDS panel	H1080-96 (96 test)
<i>For Illumina instrument**</i>	
Index Set series RUO - CE	3000
<i>For Ion Torrent instrument**</i>	
Barcode series RUO - CE	6000

***for the complete list of available indexes and barcodes, refer to Flyer_Index-Barcode*