

HRD pro

4bases HRD pro is the kit for the identification of mutations in genes related to the Homologous recombination and repair (HRR) pathway.

HRR deficiency (HRD) is involved in the tumorigenesis and progression of cancer : several studies demonstrated that HRD score is a biomarker of sensitivity to platinum chemotherapy drugs.

HRD pro is a kit for the analysis of 23 genes through a molecular protocol based on Next Generation Sequencing (NGS) technologies. The kit is validated for germline and somatic analysis (SNPs, indels, CNVs) of DNA extracted from blood or body tissues (fresh, frozen, FFPE, FNA) samples.

HRD pro kit contains all reagents required for the preparation of the capture of specifically designed probes and for the NGS analysis using Nanopore.

For the calculation of the HRD Score it is necessary to analyze two samples per patient: one germline and one somatic.

TECHNOLOGY

The HRD pro 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.

WORKFLOW

Library preparation follows a straightforward, capture-based protocol that can be completed in as little as 36 hours, with < 3 hours hands-on time. Resulting libraries can be normalized, pooled, and then loaded on to a flow cell for sequencing. Prepared libraries are sequenced on any compatible Nanopore sequencers.

REFERENCES

- Kim SJ et al. Determining homologous recombination deficiency scores with whole exome sequencing and their association with responses to neoadjuvant chemotherapy in breast cancer. Transl Oncol. 2021
- Takaya H. et al. Homologous recombination deficiency status-based classification of high-grade serous ovarian carcinoma. Sci Rep 2020.

Table 1: List of genes in HRD pro

ATM	BRIP1	RAD51B
BRCA1	BARD1	PTEN
BRCA2	CDK12	MLH1
RAD54L	CHEK1	MSH2
RAD50	CHEK2	MSH6
RAD51C	MRE11A	TP53
RAD51D	NBN	FANCL
RAD50	PALB2	

SAMPLE PER RUN

Flowcell	Samples per flowcell*		Instrument	Flowcells per instrument**
	100x	1000x		
FLO-MIN114	96	8	MinION	1
			GridION	Up to 5
FLO-PRO114M	480	48	PromethION 2/2 Solo	Up to 2
			PromethION 24	Up to 24
			PromethION 48	Up to 48

*The volume present in the kit is calculated to allow the subdivision into multiples of 8 analysis sessions. Dividing the kit in different ways decrease the total number of tests that can be performed.

**Multiple flow cells can be used during the same run session, with different libraries, or same library increasing depth

ORDERING INFORMATION

Product	REF
HRD pro	DC3080-16X (16 test)
HRD pro	DC3080-96X (96 test)
UDI***	
UDI Primers Set A	7001 (96 test)
UDI Primers Set B	7002 (96 test)
UDI Primers Set C	7003 (96 test)
UDI Primers Set D	7004 (96 test)
UDI Primers Set 16	7005 (16 test)
ADAPTER	
NANO ADAPTER	M1050-6

***UDI are always included in CEIVD kit.