

### 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 Illumina.

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 Illumina 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

Instrument	Samples per run*	
	Germline	Somatic
iSeq 11 100 Kit (300-cycles)	32	0
MiSeq Nano Kit v2(300-cycles)/(500-cycles)	8	0
MiSeq Micro Kit v2 (300-cycles)	32	0
MiSeq Kit v2 (300-cycles)/(500-cycles)	128	8
MiSeq Kit v3 (600-cycles)	208	12
MiniSeq Mid Output Kit (300-cycles)	64	0
MiniSeq High Output Kit (300-cycles)	208	12
NextSeq 550 Mid-Output Kit	1104	64
NextSeq 550High-Output Kit	3408	200

\*the estimated maximum number of samples per chip assumes a reading depth of 300x for the germline and 5000x for the somatic. The optimal number of samples can be empirically estimated on the local setup. 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.

### ORDERING INFORMATION

Product**	REF
HRD pro	C3080-16X (16 test)
HRD pro	C3080-96X (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)

\*\*the kit is also available in its version only for research use (RUO).

\*\*\*UDI are always included in CEIVD kit.