

AmoyDx[®] HRD Focus Panel

Instructions for Use

For Research Use Only. Not for use in diagnostic procedures.

REF

8.06.0045

20 tests/kit

For Illumina NovaSeq 6000, NextSeq 500, NextSeq 550



Amoy Diagnostics Co., Ltd.

No. 39, Dingshan Road, Haicang District,

361027 Xiamen, P. R. China

Tel: +86 592 6806835

Fax: +86 592 6806839

E-mail: sales@amoydx.com

Website: www.amoydx.com

Version: B1.1

Jun 2024

Background

The Homologous Recombination Repair (HRR) pathway plays an important role in the repair of double-strand breaks, which is a major cause of cancer development. It has been demonstrated that loss of function of HRR genes, Homologous Recombination Deficiency (HRD) is the inability to repair double strand breaks and will cause a higher risk of developing cancer^[1-5]. Patients with HRD showed higher responses to poly ADP ribose polymerase inhibitors (PARPi) and platinum-containing therapies^[6-7]. HRD Score testing and *BRCA1/2* mutations testing have been approved for patient selection for PARPi therapy.

Intended Use

The AmoyDx[®] HRD Focus Panel is a next-generation sequencing (NGS) based assay intended for qualitative determination of homologous recombination deficiency (HRD) status via detection and classification of single nucleotide variants (SNVs) and insertions and deletions (InDels) in protein coding regions and intron/exon boundaries of the *BRCA1* and *BRCA2* genes and the determination of the Genomic Scare Score (GSS) which is an algorithmic measurement of genomic instability status, using DNA isolated from formalin-fixed paraffin embedded (FFPE) tumour tissue specimens.

This assay is not automated and is for laboratory professional use only.

Principles of the Procedure

The test kit is based on the Halo-shape ANnealing and Defer-Ligation Enrichment (HANDLE) system technology to capture the target gene region (Figure 1). The unique molecular identifier (UID) is introduced to both ends of each DNA fragment to trace back to original template for error correction. The library construction time of HANDLE system is 5 hours with 1 hour hands-on time. After quality control (QC), the prepared DNA libraries are sequenced on Illumina sequencing platforms to detect the *BRCA1/2* gene mutations and HRD status.

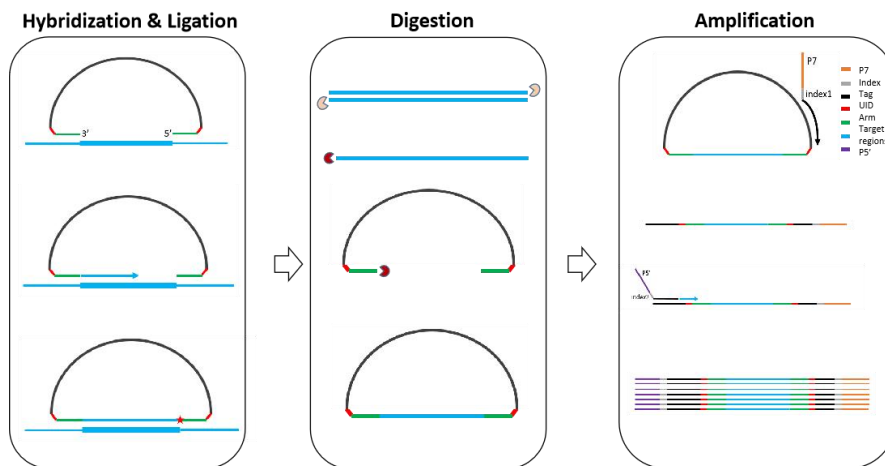


Figure 1 Principle of library construction (HANDLE system)

The probe contains an extension arm and a ligation arm which are complementary to the target gene region. First, the extension arm and ligation arm are anchored to the target gene region, and the DNA is extended from the extension arm to the ligation arm using DNA polymerase. Next, the nicks are connected with the ligase to generate the circular products. The remaining linear probes, single-strand and

double-strand nucleic acid are digested with the exonuclease. Finally, the universal PCR amplification is performed to enrich the target libraries.

Kit Contents

This kit contains the following components in Table 1.

Table 1 Kit Contents

Serial No.	Components	Main Ingredient	Quantity
1	HRD-Probe	Oligonucleotides	23 μ L/tube \times 1
2	HRD-Hybridization Buffer	Tris-HCl, K ⁺ , Mg ²⁺	23 μ L/tube \times 1
3	HRD-Extension Ligation Master Mix	DNA polymerase, dNTPs, DNA Ligase, Ligation buffer	23 μ L/tube \times 1
4	HRD-Exonuclease A	DNA Exonuclease	35 μ L/tube \times 1
5	HRD-Exonuclease B	DNA Exonuclease	23 μ L/tube \times 1
6	HRD-PCR Master Mix	Tris, Mg ²⁺ , dNTPs, DNA polymerase	550 μ L/tube \times 1
7	HRD-N7 Primer *	Oligonucleotides	5 μ L/tube \times 12
8	HRD-S5 Primer *	Oligonucleotides	5 μ L/tube \times 8
9	HRD-Positive Control A	DNA	36 μ L/tube \times 1

* For labeling and sequence information of the primers, refer to Appendix I.

Storage and Stability

The kit requires shipment on frozen ice packs and the shipping time should be less than one week. All contents of the kit should be stored immediately upon receipt at -20°C \pm 5°C.

The shelf-life of the kit is twelve months. The maximal number of freeze-thaw cycles is five.

Materials Required But Not Supplied

- 1) DNA quantification kit: QuantiFluor dsDNA System (Promega) or Qubit[®] dsDNA HS Assay Kit (Thermo Fisher Scientific) is recommended.
- 2) Fluorometer: Quantus[™] Fluorometer (Promega) or Qubit 2.0/3.0/4 Fluorometer (Thermo Fisher Scientific) is recommended.
- 3) DNA extraction kit: AmoyDx[®] Magnetic FFPE DNA Extraction Kit (Amoy Diagnostic) or MagPure FFPE DNA LQ Kit (Magentec) is recommended. It is recommended to use RNase A to degrade RNA during the DNA extraction.
- 4) DNA purification kit: Agencourt AMPure XP Kit (Beckman Coulter Genomics) or CleanNGS magnetic beads (Vdobiotech) is recommended.
- 5) Capillary electrophoresis analyzer and related kit: Agilent 2100 Bioanalyzer System and Agilent DNA 1000 Kit (Agilent Technologies) are recommended.
- 6) Thermocycler: Applied Biosystems[™] 2720 Thermal Cycler is recommended.
- 7) Illumina PhiX Control v3 (Illumina) is recommended.
- 8) Sequencing reagent: Illumina 300 cycles (Paired-End Reads, 2 \times 150 cycles) is recommended.

- 9) Sequencer: Illumina NovaSeq 6000 or NextSeq 500/550 is recommended.
- 10) Magnetic stand: DynaMag™-2 Magnet (Thermo Fisher Scientific) is recommended.
- 11) Mini centrifuge.
- 12) Vortex mixer.
- 13) Ice box for 0.2 mL and 1.5 mL tubes.
- 14) 1.5 mL nuclease-free centrifuge tubes.
- 15) 0.2 mL nuclease-free PCR tubes.
- 16) Nuclease-free filtered pipette tips.
- 17) Absolute ethanol (AR).
- 18) Nuclease-free water.
- 19) TE-low solution (10 mM Tris, 0.1 mM EDTA, pH 8.0).

Precautions and Handling Requirements

Precautions

- Please read the instruction carefully and become familiar with all components of the kit prior to use, Strictly follow the instruction during operation.
- DO NOT use the kit or any kit component after their expiry date.
- DO NOT use any other reagent from different lots in the test.
- DO NOT use any other reagent from another test kit.
- Handle all specimens and components of the kit as potentially infectious material using safe laboratory procedures.
- Only trained professionals can use this kit. Please wear suitable lab coat and disposable gloves while handling the reagents.
- Avoid contact of skin, eyes and mucous membranes with the chemicals. In case of contact, flush with water immediately.
- DO NOT pipet by mouth.

Decontamination and Disposal

- The kit contains positive control; strictly distinguish the positive control from other reagents to avoid contamination which may cause false positive results.
- PCR amplification is extremely sensitive to cross-contamination. The flow of tubes, racks, pipets and other materials used should be from pre-amplification to post-amplification, and never backwards.
- Gloves should be worn and changed frequently when handling samples and reagents to prevent contamination.
- Use separate, dedicated pipettes and filtered pipette tips when handling samples and reagents to prevent exogenous nucleic acid contamination to the reagents.
- All disposable materials are for one-time use. DO NOT reuse.
- Unused reagents, used kit, and waste must be disposed properly.

Cleaning

- After the experiment, wipe down the work area, spray down the pipettes and equipment with 75% ethanol or 10% hypochlorous acid solution.

Specimen Preparation

- Sample DNA should be extracted from FFPE tissue sample of ovarian cancer or breast cancer patients.
- The FFPE tissue sample should be fixed in 10% neutral buffered formalin for not more than 24 hours (recommend within 6 hours). It is recommended that the tumor cell content is not less than 30%. For samples with a tumor cell content less than 30%, we recommend to re-collect the samples or use the microdissection technology to collect tumor cells. It's recommended to use the central section of paraffin blocks. The freshly cut sections of FFPE tissue should be used for DNA extraction immediately. The recommended storage time for FFPE tissue samples is within 12 months.
- It's recommended to use a commercialized extraction kit to perform FFPE DNA extraction and use RNase A to degrade RNA during the DNA extraction. After the extraction, measure the concentration of extracted DNA using Quantus™ or Qubit® Fluorometer, the DNA concentration should be more than 6.25 ng/μL, and the total DNA should be more than 50 ng.
- The extracted DNA should be used for DNA library preparation immediately, if not, it should be stored at -20°C±5°C for no more than 12 months, avoid repeated freezing and thawing.

Assay Procedure

Note:

- *It is recommended to include a HRD-Positive Control A (PC) in the process of library preparation, sequencing, data analysis.*
- *When using the kit for the first time, or when necessary, it is recommended to use a no template control (NTC) to verify the absence of contamination. The NTC could be used for the quality control of the library construction process, and no need to run the sequencing or data analysis process.*
- *During the following DNA library preparation process, please use the corresponding adaptor (ie. 96-well tray) in the thermocycler to avoid the PCR products evaporation.*

1. Pre-denaturation

- 1) Take out the **DNA samples, HRD-Positive Control A** and **TE-low solution** and thaw the reagents at room temperature. When the reagents are completely thawed, vortex each tube for 5~10 seconds and centrifuge briefly, then put them on the ice.
- 2) Prepare the pre-denaturation solution in a 0.2 mL PCR tube according to Table 2.

Table 2 Pre-denaturation solution

Reagent	Volume
TE-low solution	8-χ μL
DNA	χ μL
Total	8 μL

Note:

- For FFPE samples, “ χ ” stands for the volume of 50~100 ng DNA (100 ng is recommended).
 - For Positive Control, the DNA concentration of HRD-Positive Control A is 6 ng/ μ L, take 8 μ L to construct library ($\chi=8$). The mutation result of PC is listed in table of Appendix II.
 - For NTC, use the TE-low solution of 8 μ L, $\chi=0$.
 - If the sample is degraded severely, try to increase the amount of DNA up to 200 ng.
- 3) Mix the solution thoroughly by vortexing, and centrifuge briefly. Incubate in a thermocycler, set the reaction volume as 8 μ L and perform the following program: 98 $^{\circ}$ C for 5 min, then put the tubes on the ice immediately.

2. Hybridization

- 1) Take out the **HRD-Probe** and **HRD-Hybridization Buffer** and thaw the reagents at room temperature. When the reagents are completely thawed, vortex each tube for 5~10 seconds and centrifuge briefly, then put them on the ice.
- 2) Assemble the hybridization reaction mix on ice according to Table 3.

Table 3 Hybridization reaction solution

Reagent	Volume
Pre-denaturation product	8 μ L
HRD-Probe	1 μ L
HRD-Hybridization Buffer	1 μ L
Total	10 μL

Note:

- It is recommended to pre-mix the HRD-Probe and HRD-Hybridization Buffer together when there are more than 3 samples.
- 3) Mix the solution thoroughly by vortexing, and centrifuge briefly. Incubate in a thermocycler, set the reaction volume as 10 μ L and perform the following program: 95 $^{\circ}$ C for 5 min, 60 $^{\circ}$ C for 2 hours, hold at 4 $^{\circ}$ C.

Note:

- **Important!** The hybridization at 60 $^{\circ}$ C should be a strictly 2 hour hybridization, otherwise the risk of quality control failure may be increased.
- Keep the tubes at low temperature after hybridization is finished, as high temperature in the room may increase the non-specificity. It is recommended to put the ice box beside the thermocycler in advance, when hybridization step is finished, take out the reaction tube and put it in the ice box immediately.
- The hybridization products should be stored at 2~8 $^{\circ}$ C for no more than 20 hours if not proceeding to the next step.

3. Extension-Ligation

- 1) Take out the **HRD-Extension Ligation Master Mix** and thaw the reagent at room temperature. When the reagents are completely thawed, vortex each tube for 5~10 seconds and centrifuge briefly, then put them on the ice.
- 2) Take out the above PCR tubes from the thermocycler and put them on the ice. Add 1 μ L **HRD-Extension Ligation Master Mix** into

the PCR tubes, mix thoroughly by vortexing, and centrifuge briefly. Incubate in a thermocycler, set the reaction volume as 11 μL and perform the following program: 60 $^{\circ}\text{C}$ for 10 min, hold at 4 $^{\circ}\text{C}$.

Note:

- It is recommended to put in the reaction tube when the thermocycler is heated to above 50 $^{\circ}\text{C}$ after starting the PCR program.
- Keep the tubes at low temperature after extension-ligation is finished, as high room temperature may increase the non-specificity.
It is recommended to put the ice box beside the thermocycler in advance, when it is finished, take out the reaction tube and put it in ice box immediately.
- Perform the subsequent exonuclease digestion step immediately when the extension-ligation step is finished.

4. Exonuclease Digestion

- 1) Take out the **HRD-Exonuclease A** and **HRD-Exonuclease B**, vortex each tube for 5~10 seconds and centrifuge briefly, then put them on the ice.
- 2) Assemble the exonuclease digestion reaction mix on ice according to Table 4.

Table 4 Exonuclease digestion reaction solution

Reagent	Volume
Extension-Ligation product	11 μL
HRD-Exonuclease A	1.5 μL
HRD-Exonuclease B	1 μL
Total	13.5 μL

- 3) Mix the solution thoroughly by vortexing, and centrifuge briefly. Put the tubes in a thermocycler, set the reaction volume as 14 μL and run the following program: 37 $^{\circ}\text{C}$ for 30 min, 95 $^{\circ}\text{C}$ for 10 min, hold at 4 $^{\circ}\text{C}$.

Note: The products of exonuclease digestion should be stored at 2~8 $^{\circ}\text{C}$ for no more than 20 hours if not proceeding to the next step.

5. PCR Amplification

- 1) Take out the **HRD-N7 Primer**, **HRD-S5 Primer** and **HRD-PCR Master Mix** and thaw the reagents at room temperature. When the reagents are completely thawed, vortex each tube for 5~10 seconds and centrifuge briefly, then put them on the ice.
- 2) Assemble the PCR reaction mix on ice according to Table 5.

Table 5 PCR reaction solution

Reagent	Volume
Exonuclease digestion product	13.5 μL
HRD-PCR Master Mix	25 μL
Nuclease-free water	8.5 μL
HRD-N7 Primer	1.5 μL
HRD-S5 Primer	1.5 μL
Total	50 μL

Note:

- Each of the HRD-N7 Primer or HRD-S5 Primer has a different index sequence. Use a combination of HRD-N7 Primer and

HRD-S5 Primer for each library, and different libraries should use different combination if to be sequenced in the same sequencing run. The detailed information for the index sequence is shown in Appendix I.

- *Transfer the prepared tubes to the amplification room to perform PCR amplification and the following purification to avoid contamination.*
- 3) Mix the solution thoroughly by vortexing, and centrifuge briefly. Put the tubes in a thermocycler, set the reaction volume as 50 μ L, then perform the following program according to Table 6.

Table 6 PCR Program

Temperature	Time	Cycles
98°C	30 s	1
98°C	10 s	21
61°C	30 s	
72°C	20 s	
72°C	5 min	1
4°C	∞	1

Note:

- *The PCR products should be stored at 2~8 °C for no more than 20 hours if not proceeding to the next step.*

6. Purification

- 1) Take out the AMPure XP beads or CleanNGS magnetic beads and equilibrate them to room temperature for 30 min, and vortex the bottle of the beads to resuspend any magnetic particles that may have settled.
- 2) Add 37 μ L beads and 40 μ L PCR products into 1.5 mL centrifuge tubes, mix thoroughly by vortexing or pipetting up and down 10~20 times, then incubate the mixture at room temperature for 5 min.
- 3) Place the centrifuge tubes onto the magnetic stand for 3~5 min until the solution turns clear. Gently remove and discard the supernatant while the centrifuge tube is on the magnetic stand. Do not touch the beads with pipette tip.
- 4) Keep the tubes on the magnetic stand, add 200 μ L fresh 80% ethanol into the centrifuge tube, and keep it at room temperature for at least 30 seconds. Remove and discard the supernatant while the tube is on the magnetic stand.
- 5) Repeat the above step 4).
- 6) Air dry the beads for 2~3 min while the tube is on the magnetic stand with the lid open. Do not over-dry the beads; this may result in lower recovery of DNA. Elute the samples when the beads are still dark brown and glossy looking, but when all visible liquid has evaporated. When the beads turn lighter brown and start to crack they are too dry.
- 7) Remove the centrifuge tubes away from the magnetic stand, add 20 μ L TE-low solution, mix thoroughly by vortexing. Then incubate the mixture at room temperature for 3 min.
- 8) Place the tube onto the magnetic stand for 3~5 min until the solution turns clear. Transfer the supernatant into a new 1.5 mL centrifuge tube to obtain the DNA library. Do not touch the beads with pipette tip.

Note: It is recommended to store the library at -20 °C±5 °C for no more than one week if not proceed directly to sequencing.

7. DNA Library Quality Control (QC)

- 1) DNA library concentration QC: Quantify the DNA library concentration using Quantus™ or Qubit® Fluorometer, the DNA concentration should be no less than 20 ng/μL.
- 2) DNA fragment QC (optional): Quantify the DNA library fragment size using Agilent 2100 Bioanalyzer System and Agilent DNA 1000 Kit, the main peak of the DNA fragment size should be at 230~330 bp, as shown in Figure 2.

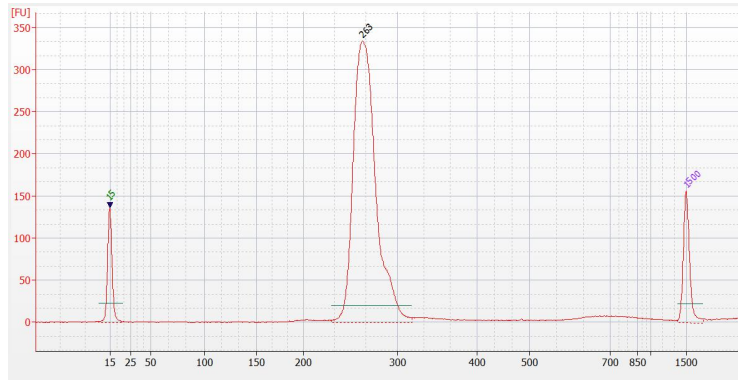


Figure 2 Diagram of the quality control of the library on Agilent 2100 Bioanalyzer DNA1000 Chip Reagent

Note:

- *If the library concentration is less than 20 ng/μL, the original DNA may be of poor quality, the DNA concentration may be inaccurate or there may be operational errors during the experiment. The DNA concentration should be retested and the DNA libraries should be re-constructed. For poor DNA quality sample, up to 200 ng of DNA input is recommended.*
- *If the NTC library detects the target length fragment (230-330 bp), there may be contamination during the experiment and the experiment should be repeated.*

8. Sequencing:

Illumina sequencers and the matched 300 cycles (Paired-End Reads, 2×150 cycles) reagents are recommended for the sequencing. In the event of insufficient sample number in a sequencing run, it is mandatory to add additional libraries of PC sequencing samples as a supplement, or to increase the percentage of spiked-in PhiX. It is recommended to sequence each HRD Focus sample from minimum 4 Gb to maximum 6 Gb. PhiX Spike in percentage can be adjusted accordingly from 1% up to maximum 50% to avoid under or over sequencing matter (as per illustration in Table 7).

Table 7 Recommended Sequencers and Sample Quantity per Run

Sequencer	Flow Cell	Read Length	Sample Quantity/Run
NextSeq 500/550	Mid	2×150 bp	~10
	High	2×150 bp	~30
NovaSeq 6000	SP	2×150 bp	~62
	S1	2×150 bp	up to 96 [#]

[#] Maximum 96 indexes available.

Note:

In the event of under-sequencing and over sequencing, raw data being generated from per run per sample is lesser than 4 Gb or more than 6 Gb per sample, re-sequencing is recommended to ensure stability of HRD focus analysis, response from BRCA and SNP uniformity or effective depth.

For more HRD focus related queries, please kindly contact AmoyDx technical team or local channel partner.

Perform the denaturation and dilution of the libraries according to the instrument’s instructions. The final concentration of sequencing library is recommended in Table 8.

Table 8 Recommended Final Concentration of Sequencing Library

illumina Sequencer	Final Concentration
NextSeq 500/550	0.6~0.8 pM
NovaSeq 6000	1~1.4 nM

Note: The concentration converting formula:

$$\text{Library Concentration [nM]} = \frac{\text{Library Concentration [ng/}\mu\text{L]} \times 10^6}{660 \times 268}$$

9. Data Analysis:

When the sequencing is finished, adopt AmoyDx NGS Data Analysis System (ANDAS) Data Analyzer to analyze the sequencing data and detect the BRCA1/2 gene mutations and HRD status. Select the module ADXHS-tHRD-GSS for FFPE sample or HRD-Positive Control A data analysis.

Check Q30 value for the sequencing run:

If Q30 value of the sequencing run is $\geq 75\%$, the sequencing run is qualified. If not, the sequencing run is unqualified.

If Q30 value of each library is $\geq 75\%$, the library sequencing data is qualified. If not, the library sequencing data is unqualified.

Quality control:

The qualified criteria for data QC is shown in Table 9.

Table 9 Quality control of data analysis

QC parameter	QC standard (FFPE sample or HRD-Positive Control A)
Q30	$\geq 75\%$
Coverage	$\geq 98\%$
BRCA_Uniformity (BRCA region)	$\geq 95\%$
BRCA_effectiveDepth (BRCA region)	$\geq 400\times$
SNP_Uniformity (SNPs region)	$\geq 90\%$
SNP_effectiveDepth (SNPs region)	$\geq 200\times$

Note:

Q30: one base call in 1,000 is predicted to be incorrect meaning a base call accuracy of 99,9%.

Coverage: The proportion of the sequencing data mapped region to the designed target region.

BRCA_Uniformity (BRCA region): The uniformity of BRCA1 and BRCA2 gene regions, defines the proportion of target areas where the depth is greater than 20% of the average depth.

BRCA_effectiveDepth (BRCA region): The average of the depth of all the individual base of BRCA1 and BRCA2 gene regions, after strand-specific base calibrate.

SNP_Uniformity (SNPs region): The uniformity of the SNPs regions, defines the proportion of target areas where the depth is greater than 20% of the average depth.

SNP_effectiveDepth (SNPs region): The average of the depth of all the individual base of SNPs region, after strand-specific base calibrate.

Result Interpretation:

- For SNV/InDel mutations of FFPE samples, the mutations are detected if meeting the following requirements.
The effective depth is $\geq 100\times$, the mutant allele frequency is $\geq 3\%$, the depth of mutant allele (ADP) of non (C>T, G>A) and non-polymer mutation is ≥ 6 , the ADP of C>T, G>A and polymer mutation is ≥ 8 .

Note: Polymer here means the regions with 5 or more consecutive identical nucleotides.

- For Genomic Scar Score (GSS) of FFPE samples
The cut-off of GSS is 50.0.
- For HRD Status results of FFPE samples
A positive HRD status result is defined by either the presence of a pathogenic/likely pathogenic variant in *BRCA1* and/or *BRCA2* genes or a positive GSS (GSS ≥ 50.0).

Note:

The analysis result of the HRD-Positive Control A should be positive as shown in Appendix II, otherwise, the HRD testing is unqualified, it's necessary to check if there is any operational error during the experiment and retest the samples.

According to the classification standards of the International Agency of Research on Cancer (IARC) and the American College of Medical Genetics (ACMG), the BRCA1/2 variants can be divided into 5 classes: pathogenic variant (5), likely pathogenic variant (4), variant of uncertain significance (VUS) (3), likely benign variant (2), benign variant (1). Only pathogenic (5) or likely pathogenic (4) variant is defined as BRCA positive.

Performances

Limit of Detection (LoD)

The LoD for SNV/InDel detection is 5% allele frequency at 50 ng DNA input, and the LoD of the GSS portion of the assay is at 30% tumor content.

Limitations

- 1) The kit is to be used only by personnel specially trained in the techniques of PCR and NGS.

- 2) The kit has been only validated for use with human FFPE samples.
- 3) This test identifies germline and somatic variants in the tumor but does not distinguish between the two.
- 4) Reliable results are dependent on proper sample processing, transport, and storage.
- 5) Different parts of the tumor tissue or different sampling times may lead to different mutation results due to tumor heterogeneity.
- 6) Lower tumor cell concentration and severely degraded samples may lead to a false negative mutation result.
- 7) A Negative result can not completely exclude the existence of gene variants. Low tumor cell content, severe DNA degradation or the frequency under the limit of detection may also cause a false negative result.
- 8) InDels ≤ 26 bp in length can be correctly detected by this kit. InDels larger than 26 bp has not been fully validated, the detection ability may decrease as the length of the InDels increases.
- 9) When InDel occurs on primers of two consecutive probes, it may cause a false negative result.

References

1. Farmer H, McCabe N, Lord CJ, Tutt A, Johnson DA, et al. (2005) Targeting the DNA repair defect in BRCA mutant cells as a therapeutic strategy. *Nature* 434: 917-921.
2. Walsh CS (2015) Two decades beyond BRCA1/2: Homologous recombination, hereditary cancer risk and a target for ovarian cancer therapy. *Gynecol Oncol* 137: 343-350.
3. Lord CJ, Ashworth A (2016) BRCAness revisited. *Nat Rev Cancer* 16: 110-120.
4. Nicholas Turner ATaAA (2004) Hallmarks of 'BRCAness' in sporadic cancers. *PERSPECTIVES* 4.
5. McCabe N, Turner NC, Lord CJ, Kluzek K, Bialkowska A, et al. (2006) Deficiency in the repair of DNA damage by homologous recombination and sensitivity to poly(ADP-ribose) polymerase inhibition. *Cancer Res* 66: 8109-8115.
6. Ray-Coquard I (2019) Olaparib plus Bevacizumab as First-Line Maintenance in Ovarian Cancer. *N Engl J Med*: 2416-2428.
7. KN M QUADRA: a phase 2, open-label single-arm study to evaluate niraparib in patients with relapsed ovarian cancer in 4th or later line of therapy: results from the BRCAmut subset. 2018 ESMO Congress: 944.

Symbols



Manufacturer



Catalogue Number



Batch Code



Use By



Contains Sufficient for <n> Tests



Temperature Limitation



Consult Instructions For Use



Keep Dry



This Way Up



Fragile, Handle With Care

Appendix I

Index Sequence Information for Primers

Name	Primer Index Information	Illumina Nextera XT v2 Set B No.	Name	Primer Index Information	Illumina Nextera XT v2 Set B No.
HRD-N716	TAGCGAGT	N716	HRD-S502	CTCTCTAT	S502
HRD-N718	GTAGCTCC	N718	HRD-S503	TATCCTCT	S503
HRD-N719	TACTACGC	N719	HRD-S505	GTAAGGAG	S505
HRD-N720	AGGCTCCG	N720	HRD-S506	ACTGCATA	S506
HRD-N721	GCAGCGTA	N721	HRD-S507	AAGGAGTA	S507
HRD-N722	CTGCGCAT	N722	HRD-S508	CTAAGCCT	S508
HRD-N723	GAGCGCTA	N723	HRD-S510	CGTCTAAT	S510
HRD-N724	CGCTCAGT	N724	HRD-S511	TCTCTCCG	S511
HRD-N726	GTCTTAGG	N726			
HRD-N727	ACTGATCG	N727			
HRD-N728	TAGCTGCA	N728			
HRD-N729	GACGTCGA	N729			

Appendix II

Pathogenic and Likely pathogenic Mutation and GSS status in HRD-Positive Control A

No	Gene	BRCA1/2 mutation status and GSS status	Expected Allele Frequency
1	<i>BRCA1</i>	NM_007294:exon20:c.5251C>T:p.(R1751*)	65%
2	<i>BRCA2</i>	NM_000059:exon11:c.4777G>T:p.(E1593*)	20%
3	/	GSS status: GSS positive	/

*Class of variant: according to the classification criteria from American College of Medical Genetics and Genomics (ACMG).