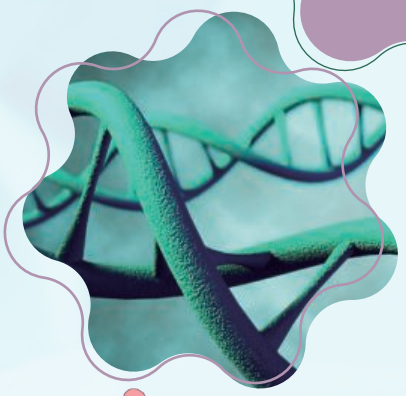
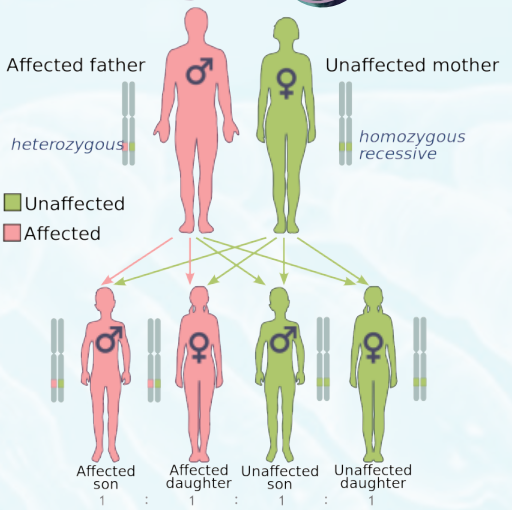
SpaceGen
飞朔生物

Hereditary Cancers Panel
(Next Generation Sequencing)



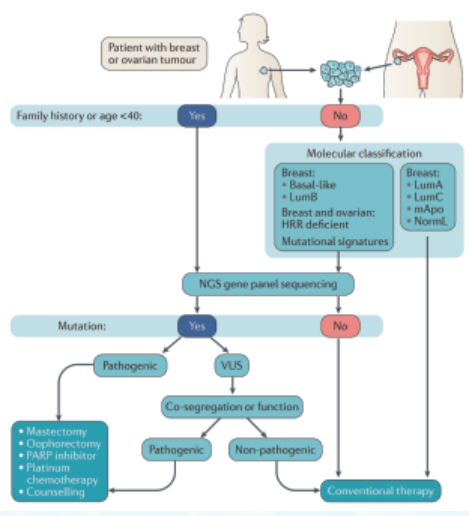
BACKGROUND

Genetic factors play a crucial role in the risk of various cancers. Research indicates that hereditary cancer account for approximately 10% of all cancers, and these cancers often exhibit familial inheritance patterns[1]. Over 100 genes have been identified with genetic susceptibility, with the majority being cancer suppressor genes[2]. Hereditary cancers are mainly inherited through autosomal dominant inheritance, with a 50% probability of passing the pathogenic gene mutation from one generation to the next. Therefore, hereditary cancers often show a familial clustering pattern. Testing for hereditary cancer genes to determine if an individual carries relevant pathogenic mutations can help in selecting targeted treatment options for cancer patients and assessing the risk of developing other cancers. For high-risk populations, it is possible to assess cancer risk and develop feasible risk management strategies, achieving early screening, early detection, early intervention, and early treatment of cancers.



Genetic patterns of hereditary tumors

COMMON HEREDITARY CANCERS



Risk management of HBOC[3]

Common hereditary cancers encompass various types of cancer, including breast cancer, ovarian cancer, gastric cancer, colorectal cancer, thyroid carcinoma, kidney cancer, and prostate cancer. For instance, mutations in MMR genes can lead to Lynch syndrome, which is associated with hereditary colorectal cancer. Mutations in HRR genes are related to hereditary breast and ovarian cancer syndrome (HBOC), as well as hereditary prostate cancer. The NCCN guidelines mention the need for genetic risk assessment for breast cancer, ovarian cancer, pancreatic cancer, and colorectal cancer, and there are corresponding risk assessment guidelines. Additionally, gastric cancer, thyroid carcinoma, kidney cancer, prostate cancer, esophageal cancer, gastrointestinal stromal tumors, endometrial carcinoma, urothelial carcinoma, melanoma, and other cancer types also have a certain degree of hereditary risk that requires genetic risk assessment.

PRODUCT INFORMATION

Product Name	Detected mutation type	Pack Size	Sample Type
Knowcan™ Hereditary Cancers Panel	SNV, CNV, InDels	16 Tests/Kit 32 Tests/Kit	Peripheral blood

[1] Genes (Basel). 2023 Apr 30;14(5):1025.
[2] Nature. 2014 Jan 16;505(7483):302-8.
[3] Nat Rev Cancer. 2016 Sep; 16(9): 599-612.

CANCER TYPE LIST

Detection of 58 genes related to 20 hereditary cancers, including 19 cancers in women and 18 cancers in men, see the table below:

Colorectal cancer	Gastric cancer	Pancreatic cancer	Esophageal cancer	Breast cancer
Kidney cancer	Urothelial carcinoma	Ovarian cancer (female)	Endometrial carcinoma (female)	Prostate cancer (men)
Thyroid carcinoma	Melanoma	Gastrointestinal stromal tumor	Tuberous sclerosis complex	Wilms Tumor (Nephroblastoma)
Multiple endocrine neoplasia	Retinoblastoma	Multiple osteochondromas	Neurofibromatosis	Hereditary paraganglioma

DETECTION SIGNIFICANCE

Cancer patients	Relatives of cancer patients or healthy people
1. Find the disease-causing genes and provide targeted treatment plans; 2. Prompt the prognosis of tumors and predict the probability of suffering from other tumors; 3. Provide effective genetic information to relatives.	1. Indicate the risk of hereditary tumor syndrome; 2. Screen high-risk groups and strengthen follow-up health management.

FEATURES & ADVANTAGES

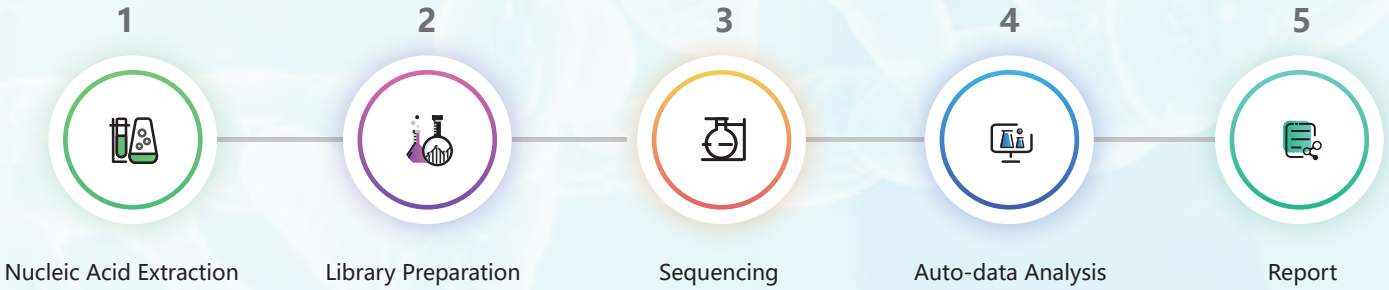
Comprehensive Cancer Detection: Simultaneously tests 58 genes associated with 20 hereditary cancer types, covering common hereditary cancer syndromes.

Extensive Detection Range: Covers the entire coding region (CDS) of genes and detects various mutation types, including single nucleotide variations (SNV), copy number variations (CNV), small insertion and deletion variations (InDels), and more.

Strict Quality Control: Implements stringent quality control standards at multiple stages, including nucleic acid extraction, library preparation, and data analysis.

Strong Compatibility: Compatible with both Illumina and MGI sequencing platforms, ensuring flexibility in choosing sequencing technologies.

DETECTION PROCESS



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