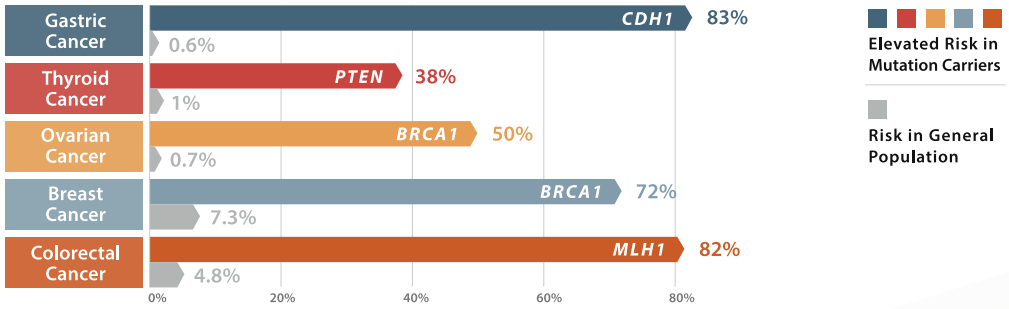
CAP ACCREDITED
COLLEGE of AMERICAN PATHOLOGISTS

ACTRisk™

Approximately 5-10% of cancers are caused by inherited genetic variants (germline mutations). In addition to the well-characterized *BRCA1/2*, mutations in many other genes also cause a higher lifetime risk of cancer, up to 10-90 times higher than for someone without a mutation[1,2,3,4]. Therefore, understanding the hereditary cancer risk can assist a medical professional to better diagnose and manage the disease.

Carrying Pathogenic Mutations Significantly Increases Cancer Risk [1,2,3,4]



Pathogenic mutations in a single gene may cause multiple types of cancer in a family (known as a hereditary cancer syndrome), whereas a single type of cancer can also be caused by multiple susceptibility genes. In order to accurately assess the risk of a particular type of hereditary cancer, it is important to sequence all the susceptibility genes.

ACTRisk™ Genetic Test for Hereditary Cancer

ACTRisk™ is a fast and accurate genetic test analyzing 32 genes strongly associated with common hereditary cancers. It provides important genetic information that helps physicians and genetic counselors to precisely evaluate cancer risk and discuss risk management options with clients.

Hereditary Cancers Covered

- Breast Cancer
- Ovarian Cancer
- Colorectal Cancer
- Endometrial Carcinoma
- Melanoma
- Gastric Cancer
- Prostate Cancer
- Pancreatic Cancer *

* Not all pancreatic cancer susceptibility genes are covered by this test. Please consult a physician or genetic counselor before testing.

Hereditary Cancer Syndromes Covered

- Lynch Syndrome
- Li-Fraumeni Syndrome
- Juvenile Polyposis Syndrome
- Peutz-Jeghers Syndrome
- Cowden Syndrome
- Von Hippel-Lindau Syndrome

Who is Suitable?

- Individuals with a family history of cancer
- Cancer patients with a family history of cancer
- Cancer patients without family history of cancer but have multiple tumors diagnosed before age 50
- Individuals highly concerned with risk of hereditary cancer

ACTRisk™ Features

- Analyzes 32 genes using Next-Generation Sequencing
- Comprehensively evaluates 8 common hereditary cancers and 6 cancer syndromes
- Covers important cancer susceptibility genes listed in NCCN Guidelines
- Integrates the analysis with multiple databases, including Asian population specific ones
- Provides risk assessment based on latest studies/evidence

References

1. Kuchenbaecker, KB, et al. JAMA. 2017;317(23):2402–2416. doi:10.1001/jama.2017.7112
2. NCCN Guidelines: Genetic/Familial High-Risk Assessment: Colorectal (2017. V3)
3. NCCN Guidelines: Genetic/Familial High-Risk Assessment: Breast and Ovarian (2018. V1)
4. NCCN Guidelines: Gastric Cancer (2017. V3)

ACTRisk™

Tested Genes and Associated Cancers / Cancer Syndromes

Tested Genes	Associated Cancers								Associated Cancer Syndromes					
	Breast Cancer	Ovarian Cancer	Colorectal Cancer	Endometrial Carcinoma	Melanoma	Gastric Cancer	Prostate Cancer	Pancreatic Cancer*	Lynch Syndrome	Li-Fraumeni Syndrome	Juvenile Polyposis Syndrome	Peutz-Jeghers Syndrome	Cowden Syndrome	Von Hippel-Lindau Syndrome
APC			●			●								
ATM	●		●			●	●							
AXIN2			●											
BARD1	●	●												
BMPR1A			●			●					●			
BRCA1	●	●			●	●	●	●						
BRCA2	●	●			●	●	●	●						
BRIP1		●					●							
CDH1	●					●								
CDK4					●									
CDKN2A (p14^{ARF}/p16)					●			●						
CHEK2	●		●				●			●				
EPCAM		●	●	●		●	●		●					
FANCC	●	●												
MLH1		●	●	●		●	●	●	●					
MSH2		●	●	●		●	●	●	●					
MSH6		●	●	●		●	●	●	●					
MUTYH (AD)	●		●											
MUTYH (AR)		●	●											
NBN	●					●	●							
PALB2	●						●							
PMS2		●	●	●		●	●		●					
POLD1			●											
POLE			●											
PTEN	●		●	●	●	●							●	
RAD51C		●					●							
RAD51D		●					●							
SCG5/GREM1			●											
SMAD4			●			●					●			
STK11	●	●	●			●		●				●		
TP53	●	●	●		●	●				●				
VHL								●						●
XRCC2	●													

*Not all pancreatic cancer susceptibility genes are covered by this test. Please consult a physician or genetic counselor before testing.

ACTRisk™ Specifications

Assay Performed Sequencing of 32 hereditary cancer-related genes

Technology Next-Generation Sequencing

Sequencing Mean Depth >500x

Turnaround Time 30 calendar days (upon receipt of complete requisition form and qualified sample)

Genetic Variation
- Single nucleotide variants (SNVs)
- Small insertions and deletions (small InDels)
- Splice site variants

Sample Types
- 8 ml whole blood

(Collect into Streck tube. Upon collection, immediately and gently invert the tube 10 times.)

- **The tested individual will need to provide a pedigree or complete a family history questionnaire.**
- ACT Genomics only provides a technical report for the test. The tested individual should consult a specialist physician or genetic counselor to discuss clinical implications and risk management options.

ACT Genomics Co., LTD.
http://www.actgenomics.com
service@actgenomics.com
TAIPEI | SINGAPORE | HONG KONG | SHANGHAI | TOKYO