GENE SOLUTIONS

SPOT-MAS

# LUNG CANCER
# EARLY DETECTION TEST REPORT

Spot early signs of lung cancer, by analyzing DNA shed by cancer cells (ctDNA).

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# ctDNA ANALYSIS RESULT
## SPOT-MAS LUNG:
## EARLY DETECTION OF CANCER IN THE LUNG

## PATIENT INFORMATION

| PERSONAL INFORMATION | | SAMPLE INFORMATION | | TEST INFORMATION | |
|---|---|---|---|---|---|
| **Full Name:** | Sample Patient | **Sample Type:** | Blood | **Ordering Physician:** | DR. GS |
| **NRIC/Passport/ID:** | XXXXXX | **Date Collected:** | 01/01/2025 | **MCR/MMC no.:** | XXXXXX |
| **Gender:** | Female | **Date Received by Lab:** | 02/01/2025 | **Sample Collection Place:** | Sample Hospital |
| **Date of Birth:** | 19/01/1987 | | | **Date Reported:** | 20/01/2025 |

## CLINICAL INFORMATION

| | |
|---|---|
| **Remark:** | An in-depth analysis and commentary on a clinical topic, supported by the latest evidence and insights. Clinical comments can also include personal experiences. |

## RESULT

LABCODE ID: SAAAAAR29 | ECD ID: ECDXXXX01 | PERFORMED TEST: SPOT-MAS LUNG

### RISK ASSESSMENT


Scope of Investigation: **ctDNA Z-Score**

Risk Value: **1**

Result: **No Abnormalities Detected**

- Negative Score: ≤3
- Positive Score: >3

**ctDNA (circulating tumor DNA)** is DNA released from cancerous cells and tumors, circulating freely in the bloodstream.

**What Your Result Means:**

**No signals have been found** to suggest the possibility that you are having cancer in the lung.

*This result is only valid on the received sample*

## NOTE:

- A negative result (no ctDNA signal detected) does **NOT COMPLETELY** rule out the presence of a tumor because the tumor is out of scope (lung) OR is located in a difficult location for ctDNA release[1], OR **the secondary cancer** has a radically different omics from the primary cancer[2].
- The sensitivity of the test is 90.0%[3], which means that for **every 100 lung cancer cases, about 10 cases will be missed**.
- Recommend using this test as a supporting screening test, **NOT** as a substitute for recommended routine cancer screening tests.
- You should continue regular health check-ups and cancer screenings as directed by your doctor.


*(1) Bettegowda, Chetan et al. "Detection of circulating tumor DNA in early- and late-stage human malignancies." Science translational medicine 6.224 (2014). doi:10.1126/scitranslmed.3007094*

*(2) Hao, Xiaoke et al. "DNA methylation markers for diagnosis and prognosis of common cancers." Proceeding of the National Academy of Sciences 114.28 (2017). doi:10.1073/pnas.1703577114*

*(3) Gene Solutions internal validation data on lung cancer*





This report is electronically signed by

**Laboratory Director**

Christopher Wong, PhD


**Gene Solutions Singapore**

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**MOH license:** L/24I1577/CLB/001/242


CAP ACCREDITED

COLLEGE of AMERICAN PATHOLOGISTS

Ver. Nov. 2025

# YOUR RESULT

## EARLY CANCER SCREENING BASED ON DNA RELEASED FROM TUMOR (ctDNA)

- This analysis helps detect Lung cancer based on the ctDNA released from the tumor (ctDNA). These DNA fragments can be released early, when the tumor is small, has not metastasized and has not caused the typical clinical manifestations of cancer. The content of ctDNA is directly proportional to tumor size and metastasis, while ctDNA release capacity depends on cancer type and tumor locations, which will affect the ability to detect ctDNA in blood.
- This ctDNA analysis result shows that **ctDNA SIGNAL (DNA from tumor) originating from the lung was NOT DETECTED** in your blood sample.

**Note:**

- This result shows that after analyzing your blood sample, **NO signal suggestive of Lung cancer was detected**.
- This analysis screening for cancer at the time blood sample was drawn and does NOT rule out the cancer risk in the future. With a negative result, you should repeat this test annually for early cancer screening AND in combination with recommended routine cancer screening tests to increase the chance of detecting cancer at early stage.
- This test is a supporting test, **NOT** a substitute for current routine cancer screening and diagnostic tests such as low-dose CT (LDCT), PET-CT, and biopsy-histopathology.

**With this test result, we recommend that you take the following additional steps:**

**1 You need to periodically monitor your health every year and go to a doctor when there are signs of unwellness or early warning signs of cancer appear (note below), in order to have a diagnosis and suitable treatment.**

Note: Delaying medical examination when there are suspicious symptoms will lead to the risk of diagnosing cancer at a late stage.

**7 Warning Signs Of Cancer**

The American Cancer Society has recommended some warning signs of cancer. To make it easier to remember, experts use the initials C-A-U-T-I-O-N (warning), including:

- C (Change in bowel or bladder habits): Change in bowel and bladder habits. For example: frequent urination, hematuria, diarrhea, constipation, diarrhea with alternating constipation, bloody stools...
- A (A sore that does not heal): Persistent pain that does not relieve. Any chronic, persistent, or unexplained pain is a sign of concern.
- U (Unusual bleeding or discharge): Unusual bleeding or discharge from the nose, mouth, urinary tract, digestive tract or vagina.
- T (Thickening or lump in the breast or elsewhere): A thickening or lump in the breast or any other part of the body.
- I (Indigestion or difficulty swallowing): Indigestion or difficulty swallowing.
- O (Obvious change in size, color, shape, or thickness of a wart, mole, or mouth sore): An obvious change in the size, color, shape or thickness of a wart, mole, or sore in mouth.
- N (Nagging cough or hoarseness): Persistent cough or hoarseness.

Note: When one of the above symptoms is present without an obvious cause, persists for more than 2 weeks and/or tumor DNA (ctDNA) analysis is positive, it is most likely a sign of cancer. You should see a specialist for advice.

**2 You need to build a healthy diet, work, exercise and rest to maintain physical and mental health. Maintaining a healthy lifestyle also helps reduce the risk of cancer, specifically as follows:**

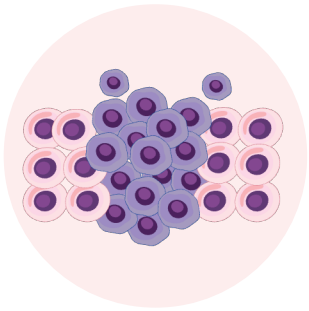
- Limit your exposure to UV rays by avoiding excessive direct sun exposure
- Any new, unusual or other moles should be reported to your doctor
- Avoid or limit smoking
- Exercise regularly
- Limit the use of alcoholic beverages
- Maintain a healthy weight
- Eat lots of fruits and vegetables
- Gain insight into your personal health and your family's medical history

***If you have any questions or need more consultation about the results, please contact Gene Solutions customer service through your physician.***

# ctDNA SCREENING METHOD

## How SPOT-MAS™ test works

1



Cancer cells grow and form a tumor

2


Tumor cells release DNA fragments into the bloodstream, known as circulating tumor DNA (ctDNA)

3

Obtain 01 tube of whole blood (10ml). Extract cell-free DNA from Plasma.

4

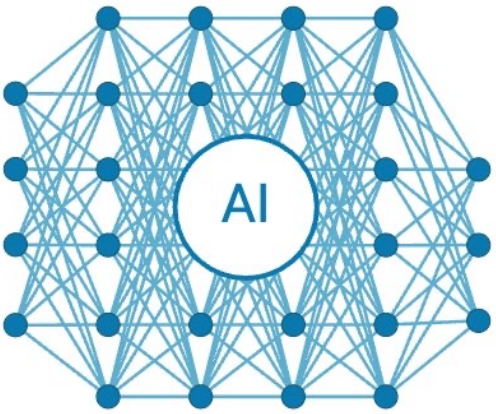
Analyze Genetic, Epigenetic, and Fragmentomic Features of ctDNA

**No ctDNA detected: SPOT-MAS test looked for a cancer signal and did not find one at this moment.**

**ctDNA detected: SPOT-MAS test detected the presence of ctDNA, indicating presence of cancer cells.**

Apply next-generation sequencing to analyze multiple features of ctDNA

5




Use AI-guided model to predict the tissue of origin of the detected ctDNA.

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# TECHNICAL SPECIFICATION

## SPOT-MAS TECHNOLOGY

Cell-free DNA is extracted from the blood sample and processed using a proprietary next-generation sequencing (NGS) workflow, which includes both whole genome sequencing and amplicon-based sequencing. Sequencing is performed using DNA nanoball technology on the DNBSEQ-G400 system (MGI Tech Co.). The resulting data are then analyzed using AI-guided machine learning models to detect the presence of ctDNA in the blood and identify the tumor origin, based on a multi-omic database that incorporates genetic, epigenetic, and fragmentomic features of cfDNA.

## LABORATORY INFORMATION

- This screening test was developed by, and its performance characteristics determined by Gene Solutions Genomics Pte Ltd, a company registered in Singapore.
- Gene Solutions Genomics is licensed by the Ministry of Health (Singapore) as a Clinical Laboratory (License no. L/24I1577/ CLB/001/242) under the Healthcare Services Act 2020.

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# Share the awareness of early cancer detection today. Early detection is the key to save lives.


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