

Comparison of Methods Commonly Used to Detect Tumor Markers

	Multiplexed Bead Immunoassay	(Electro)Chemiluminescence	Solid-phase Chips
Analytes per assay	Multiple analytes; each assay can detect up to 100 analytes	Single analyte; 1 analyte in 1 assay	6 or 12 analytes
Combination Flexibility	Flexible according to needs	Only 1 analyte per assay	Fixed combination
Sample Volume Needed	20μL for multiple analytes	100μL for only 1 analyte	50μL
Operational Steps	Fully automated	Fully automated	Semi-automated; manual sample loading
Throughput	Can reach 10000 T/H	80~400 T/H	Relatively fast
Sensitivity	High	High	Low
Repeatability	Very good	Good	Relatively poor
Linear Range	Wide	Wide	Relatively narrow
Reagent Cost	Low reagent cost, reduced consumables cost	Cost is high for reagents and consumables	Low

Tellgen Corporation, founded in 2003, is an in vitro diagnostics company located in the 'global research centre' Zhangjiang Hi-Technology Park in Shanghai, P.R. China. We are a listed company focusing on research and producing high-end IVD products. With our company's slogan "Deeper Understanding of Life", we aim to explore the scientific field of research and bring our research results to help aid in auxiliary diagnosis. We focus on early-stage tumor screening to provide diagnostic help, determination of personalized medicine, and the prediction of drug use.

Tellgen Corporation is the first to release the TESMI system, based on the high-throughput multiplexed bead immunoassay technology, leading a role in the IVD industry. Until now, we have different detection platforms covering immunology, molecular biology, biochemistry, mass spectrometry and more that uses technologies such as multiplexed bead immunoassay, chemiluminescence immunoassay, multiplex-PCR, liquid chromatography tandem mass spectrometry and others. Our products range from full-course tumor monitoring, reproductive health detection, autoimmunity detection, infectious diseases detection, cardiovascular disease detection, and DNA methylation detection. We have innovative products such as tumor marker joint assay (first in China to release), the first CFDA-approved Y chromosomal microdeletion detection kit, and the first CFDA-approved SHOX2+RASFFIA DNA methylation detection kit for lung cancer screening.

We have a stable cooperation with Hitachi and collaborated to release the Hitachi-Tellgen compatible assembly line which offers high-throughput sample pre-treatment and biochemical analyzing system. With the addition of TESMI F4000 to this assembly line, we can achieve high-throughput target detection.

Tellgen insists to adhere to research and actively collaborates with companies from around the world to produce new innovative products and contribute to human health.

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Deeper Understanding of Life
 探索生命 延续希望

Tumor Markers

Throughput can reach 840 T/H
 18 Analytes for Flexible Combination
 Multiplexed Bead Technology



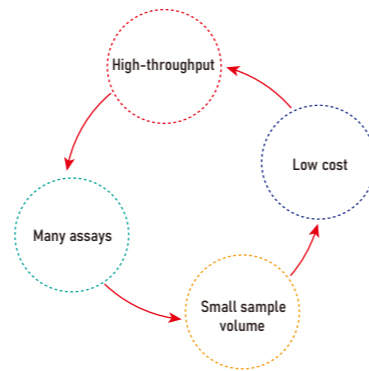
Tumor Marker Testing Kit (Quantitative)
 (Multiplexed Bead Immunoassay)

Analytes Menu

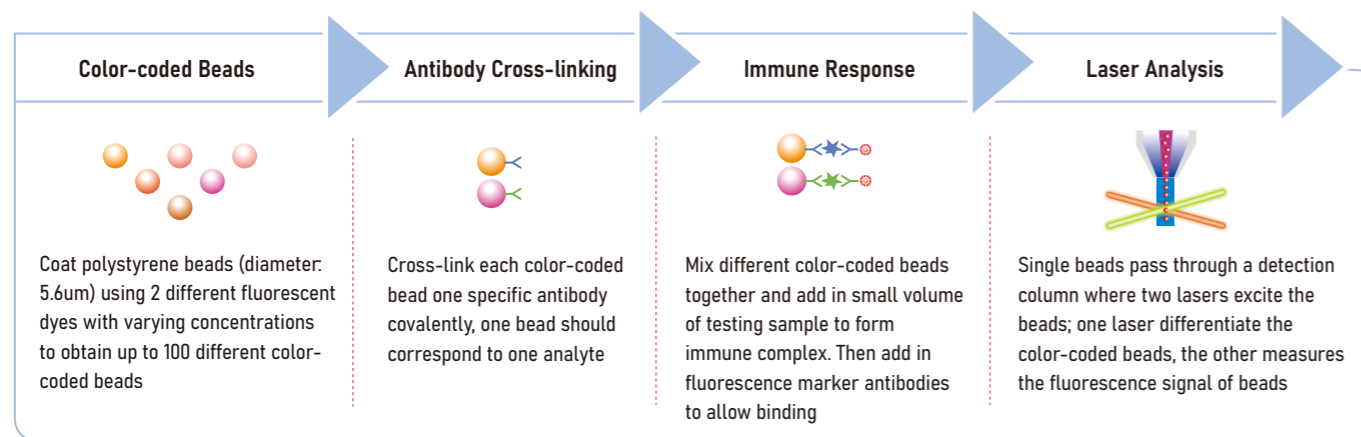
- AFP
- CEA
- CA242
- CA125
- NSE
- CYFRA21-1
- f-PSA
- t-PSA
- free-β-hCG
- CA19-9
- CA15-3
- CA72-4
- SCCA
- Pepsinogen I / II
- HE4
- CA50
- ProGRP

Product Features

- High-throughput:**
 By using the multiplexed bead immunoassay technology, we can achieve a throughput of 840 T/H, testing efficiency is several time that of chemiluminescence immunoassay
- Numerous analytes**
 18 analytes; customizable analyte combinations
- Low reagent cost:**
 Only 1 set of consumables needed for multiple analytes, effectively saving costs for consumables and storage
- Easy operation:**
 Free yourself by using the fully automated TESMI system for detection



Detection Principle



Exclusive Joint Assays

Commonly used tumor markers

- AFP CEA
- Most commonly used analytes
 - Mainly targeting hepatic carcinoma and other digestive system tumors

Gastric cancer screening

- PGI PGII
- Marker for metaplastic (chronic) atrophic gastritis
 - Preliminary screening indicators for gastric cancer
 - Aids early discovery of gastric cancer (sensitivity 77%; specificity 73%)

Prostate cancer screening

- f-PSA t-PSA
- Priority marker for male prostate cancer screening
 - Ratio of the two marker values aids diagnosis of malignant or benign tumors

Lung cancer markers

- CEA CYFRA21-1 NSE
- European Group on Tumour Markers (EGTM) recommended set for lung cancer testing
 - CYFRA21-1 is the best marker for lung cancer, with a single marker detection rate of > 65%
 - Joint detection increases detection rate to > 90%
- Can also have CA125 and SCCA markers as add-ons to lung cancer testing**

Selected tumor markers

- AFP CEA CA125 CA242 CYFRA21-1 NSE free-β-hCG
- CYFRA21-1 and NSE are the best markers for non-small cell lung cancer (NSCLC) and small cell lung cancer (SCLC) respectively
 - free-β-hCG is widely used for assessing prognosis, the higher the value for this marker, the poorer the prognosis and higher the tumor deterioration

Customizable analyte combination for flexible testing

- Joint assays can combine with single analytes
- Customize assays according to hospital needs
- Joint assays can significantly increase detection efficiency

Common Tumor Markers and Their Clinical Significance

Marker	Main Tumors Associated	Other Tumors Associated
AFP	Primary liver cancer; germ cell carcinoma	Neuroblastoma; ovarian teratoma; gastric cancer; biliary cancer; pancreatic cancer
CEA	Broad spectrum tumor marker	Commonly seen in lung cancer; colon cancer; pancreatic cancer; gastric cancer; breast cancer; medullary thyroid cancer
CA19-9	Pancreatic cancer; gastric cancer; colorectal cancer	Hepatic cancer; biliary cancer; gallbladder cancer
CA125	Ovarian cancer	Lung cancer; pancreatic cancer; breast cancer; hepatic cancer; gastrointestinal cancer; cervical cancer
CA15-3	Breast cancer	Lung cancer; ovarian cancer; lung adenocarcinoma; colorectal cancer
t-PSA/f-PSA	Prostate cancer	Certain types of gynecologic cancer; polycystic ovary syndrome; breast cancer
CA242	Pancreatic cancer; gastric cancer; colorectal cancer	Hepatic cancer; esophageal cancer; lung cancer
SCCA	Cervical squamous cell carcinoma	Lung adenocarcinoma; head and neck squamous cell carcinoma; esophageal cancer; vulvar squamous cell carcinoma
CYFRA21-1	Non-small cell lung cancer; cervical cancer; esophageal cancer	Bladder cancer; cervical cancer; esophageal cancer
NSE	Small cell lung cancer	Lung adenocarcinoma; large cell carcinoma; nervous system tumors
free-β-hCG	Gynecologic cancers; testicular cancer	Breast cancer; lung cancer; hepatic cancer
CA72-4	Gastric cancer	Breast cancer; colorectal cancer; lung cancer; ovarian cancer
PG I / PG II	Most sensitive marker for gastric cancer screening	-
HE4	Ovarian cancer	Lung adenocarcinoma; breast adenocarcinoma; pancreatic cancer; endometrial cancer
ProGRP	Small cell lung cancer	Large cell lung carcinoma; medullary thyroid cancer
CA50	Pancreatic cancer; gastric cancer; colorectal cancer	Hepatic cancer; gallbladder cancer; biliary cancer