



# Tumor Markers

Disease monitoring through determining highly specific tumor markers



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Cancer is characterized by the development of abnormal cells which divide uncontrollably and can infiltrate and destroy normal body tissues and organs metabolism as well as manipulate the local microenvironment to act against the host.

Targeted treatment and prevention programs have led to higher survival rates of affected patients in recent years. However, despite reliable diagnostics at an early stage of the disease, cancer is the second-leading cause of death worldwide.

Monitoring of the disease stage and potential progression is enabled through determining highly specific tumor markers affiliated with liver, pancreatic, intestinal, breast and reproductive tract cancer types as well as many others.

Erba ELISA tests have shown their reliability and specificity in the quantitative determination of following parameters:



## Alpha-Fetoprotein (AFP)

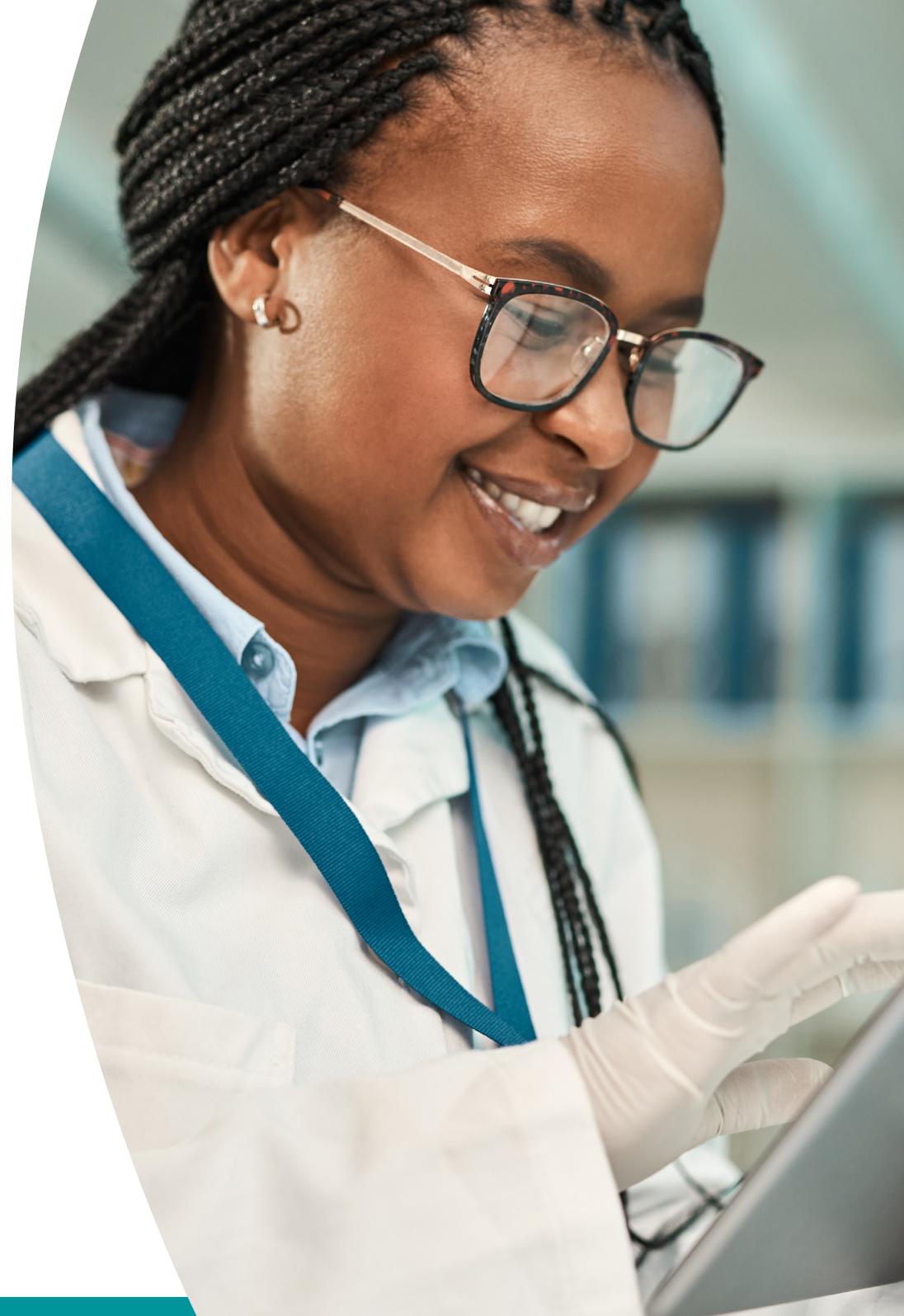
Alpha-Fetoprotein (AFP) is produced naturally during fetal and neonatal development in the fetal yolk sac, liver, and gastrointestinal tract. Elevated AFP markers in adults may however indicate several malignant diseases, like testicular cancer or hepatocellular carcinoma.

Cat No	Product name	Parameters of the test
IME00037	AFP	Quantitative ELISA for determination of AFP marker in human serum

## CA 15-3

The most common life-threatening malignancy in women of developed countries today is breast cancer. Around 30% of all cases progress to metastatic stage. Tumor marker CA 15-3 is most useful for monitoring patients post-operatively for recurrence, particularly at metastatic stages. Most patients with local and systemic recurrence have elevated CA 15-3, which can predict recurrence earlier than radiological and clinical criteria. A 25% increase in the serum CA 15-3 is associated with progression of carcinoma. A 50% decrease in serum CA 15-3 is associated with response to treatment.

Cat No	Product name	Parameters of the test
IME00038	CA 15-3	Quantitative ELISA for determination of CA 15-3 marker in human serum



## CA 125 and HE4

Cancer Antigen 125 (CA 125) and Human Epididymis protein 4 are important markers associated with epithelial ovarian cancer. Elevated serum CA 125 levels can be found in individuals with serous, endometrioid, clear-cell, and undifferentiated ovarian carcinomas. The serum concentration of CA 125 is greater than 35 units per ml in 60% of women with ovarian cancer and >80% of patients with disseminated ovarian cancer. HE4 is an important marker produced by most, but not all, epithelial ovarian cancer cells. HE4 has been shown to be a reliable marker in 90% of serous and endometrioid epithelial ovarian cancers and 50% of clear-cell tumors. HE4 marker is not usually elevated in mucinous cancers. Determination of CA 125 and HE4 serum levels provides complementary information which may influence effective treatment.

Cat No	Product name	Parameters of the test
IME00040	CA 125	Quantitative ELISA for determination of CA 125 marker in human serum
IME00046	HE4	Quantitative ELISA for determination of HE4 marker in human serum

## CA 19-9

CA 19-9 represents the most important and basic carbohydrate tumor marker. CA 19-9 serum levels are frequently elevated in individuals with various gastrointestinal malignancies, such as pancreatic, colorectal, gastric, and hepatic carcinomas. Persistent elevation in serum CA 19-9 levels following treatment may be indicative of the occult metastatic and/or residual disease. A persistently rising serum CA 19-9 concentration may be associated with progressive malignant disease and poor therapeutic response.

Cat No	Product name	Parameters of the test
IME00039	CA 19-9	Quantitative ELISA for determination of CA 19-9 marker in human serum

## Beta-2 Microglobulin

Beta-2 Microglobulin is expressed on nucleated cells and is found at low levels in the serum and urine of healthy individuals. The concentrations increase during certain inflammations, some viral diseases, renal dysfunction, and autoimmune diseases. Monitoring of Beta-2 Microglobulin serum levels helps in determining the severity and prognosis of multiple myeloma, chronic lymphocytic leukemia, or non-Hodgkin's lymphoma.

Cat No	Product name	Parameters of the test
IME00036	Beta-2 MICROGLOBULIN	Quantitative ELISA for determination of Beta-2 Microglobulin in human serum

## CEA

Carcinoembryonic Antigen (CEA) is expressed at high levels in the fetus but normally not detected in healthy adults. Highly elevated concentrations in the serum are found in patients with colorectal (57%), gastric (41%), hepatocellular (45%), pancreatic (59%), and biliary (59%) carcinomas. CEA is used primarily to monitor patients after surgery for recurrent colorectal carcinoma. Serum CEA marker has sensitivity between 60% and 95% prior to clinical detection and a lead-time between two and 10 months regarding detection of recurrences.

Cat No	Product name	Parameters of the test
IME00041	CEA	Quantitative ELISA for determination of CEA marker in human serum

## Human Prostate Specific Antigen

Human Prostate Specific Antigen in its intact (PSA) or free form (free PSA) are used primarily for screening male population for prostate cancer. Elevated serum PSA levels have also been attributed to benign prostatic hyperplasia and prostatitis, leading to a sizable percentage of false positive screening results. Determination of free PSA levels in conjunction with total PSA improves specificity of prostate cancer screening in selected men with elevated total serum PSA levels. Subsequently this reduces unnecessary prostate biopsies with minimal effects on cancer detection rates.

Cat No	Product name	Parameters of the test
IME00043	Free PSA	Quantitative ELISA for determination of free PSA marker in human serum
IME00044	PSA	Quantitative ELISA for determination of PSA marker in human serum

## Free Beta human Chorionic Gonadotropin (hCG)

Free Beta human Chorionic Gonadotropin (hCG) is used to test in patients with gynecological and germ cell tumors to aid in the evaluation of therapeutic response and the recurrence or metastasis. Most commonly, hCG is used for screening patients with seminomatous and non-seminomatous testicular tumors, ovarian germ cell tumors, the gestational trophoblastic diseases, and non-testicular teratomas.

Cat No	Product name	Parameters of the test
IME00045	Free BETA hCG	Quantitative ELISA for determination of free BETA hCG in human serum



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