

- Hormones
- Cardiac Markers
- Cancer Markers
- Human Proteins
- Enzymes & Related Biochemicals
- Sera, Plasma, & Infectious Agents

Cancer Associated Antigens

- Breast Cancer
- Ovarian Cancer
- Pancreatic Cancer

Cancer Associated Antigen - Breast (CAA-B) originated from a primary breast cancer cell colony. It is a glycoprotein of molecular weight 330,000 - 450,000. Studies suggest it is 50% carbohydrate, linked through an O-glycosidic bond to the polypeptide backbone. Clinically, CAA-B is elevated in the serum of patients with mammary tumors. Immunoassays for CAA-B are not recommended to screen for breast cancer, but show significant clinical utility in the post-surgical follow-up of breast cancer patients.

Cancer Associated Antigen - Ovarian (CAA-O) is part of a high molecular weight glycoprotein complex found in the serum of women with epithelial ovarian cancer. The CAA-O complex, its structure still not completely defined, has a molecular weight of approximately 200,000. It is 24% carbohydrate, with mannose as the main sugar component. Difficult to diagnose, ovarian cancer has become one of the most lethal forms of gynecological malignancies in the United States. One of the most promising applications of CAA-O immunoassays relates to the discrimination between benign and malignant pelvic masses at the time of initial diagnosis. Furthermore, serum levels of CAA-O and CEA may be useful in differentiating between ovarian and non-ovarian malignant diseases.

Cancer Associated Antigen - Pancreatic (CAA-P) is an antigenic determinant associated with a 210,000 Dalton glycoprotein detected in the serum and ascites fluid of cancer patients. This glycoprotein is acidic in nature due to the high sialic acid content and has a large amount of serine, threonine, and acidic or amide amino acids. In addition, CAA-P contains no detectable cysteine. While the clinical diagnosis of pancreatic cancer is difficult because symptoms are non-specific and ill-defined, CAA-P is, to date, the most reliable, non-invasive, and inexpensive serum marker developed to monitor the progression of pancreatic cancer, allowing the differentiation between pancreatic cancer and chronic pancreatitis. It should be noted, however, that the clinical serum assay for CAA-P is not intended as an initial screen for pancreatic cancer; it is recommended for post-surgical follow-up only.

	Catalog Number	Purity (SDS-PAGE)	Activity
CAA - Breast	C1924	95%	Reported as assayed
CAA - Ovarian	C1824	95%	Reported as assayed
CAA - Pancreatic	C2024	95%	Reported as assayed
Source:	Human Ascites Fluid		
Form:	100 mM Citrate, 500 mM Sodium Chloride, 0.1% Sodium Azide, pH 5.0 ± 0.1, contains a stabilizer		
Protein/Content:	Not determined		
Storage:	2-8°C short term -10°C to -25°C long term		
Biohazard:	At a minimum, the above products are tested and found negative for HIV-1, HIV-2, Hepatitis B, and HCV. Other tests can be performed as needed.		

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Carcinoembryonic Antigen (CEA)

Carcinoembryonic Antigen (CEA) is a glycoprotein compound that is expressed in a variety of secretory tissues. CEA is thought to be involved in the intercellular recognition and attachment involved in the development and proliferation of various metastases. Elevated serum levels of CEA are associated with several malignant states, and immunoassays for CEA have been used for several years in monitoring many such malignancies.

CEA Antigen

<u>Catalog Number</u>	<u>Purity</u>	<u>Form</u>
C4814	95% (SDS-PAGE)	Lyophilized powder
C0224	95% (SDS-PAGE)	10 mM Tris, 0.1% Sodium Azide, pH 8.0 ± 0.1
C0223	50% (Abbott IMx/Total Protein)	10 mM Tris, 0.1% Sodium Azide, pH 8.0 ± 0.1
C0222	Purity estimated by Abbott IMx/Total Protein	10 mM Potassium Phosphate, 100 mM Sodium Chloride, 0.1% Sodium Azide, pH 8.0 ± 0.1
C0212	Purity estimated by Abbott IMx/Total Protein	Lyophilized from 10 mM Potassium Phosphate, 100 mM Sodium Chloride, 0.1% Sodium Azide, pH 8.0 ± 0.1

Source	
C4814:	Human Colon Carcinoma Cell Line SW1116
C0224, C0223, C0222, & C0212:	Human Liver Metastasis of a Primary Colon Carcinoma
CEA/Protein Content:	Determined by Abbott IMx and by either Lowry or Bio-Rad Protein Assay (BSA standard)
Storage:	2-8°C short term -10°C to -25°C long term
Biohazard:	At a minimum, the above products are tested and found negative for HIV-1, HIV-2, Hepatitis B, and HCV. Other tests can be performed as needed.

CEA Antibodies

	<u>Catalog Number</u>	<u>Purification Method</u>
Monoclonal to CEA	MC025	Ion-exchange chromatography

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-Fetoprotein (AFP)

-Fetoprotein (AFP) belongs to the α_1 -globulin family of human plasma proteins and contains approximately 4% carbohydrate. AFP is produced primarily in the fetal liver and can be found in fetal and maternal blood and in amniotic fluid. As part of a triple marker screening protocol with human chorionic gonadotropin and unconjugated estriol, immunoassays for maternal serum levels of AFP are useful in detecting neural tube defects and Down's Syndrome. Elevated AFP serum levels are also found in pregnant women with diabetes and Rh immunization. Furthermore, AFP serum levels may be indicative of viral hepatitis, chronic active hepatitis, ulcerative colitis, Crohn's disease, alcoholic cirrhosis, and adenocarcinomas of the liver, lung, pancreas, stomach, and gall bladder.

AFP Antigen

Catalog Number	Purity	Form
A2414	95% (SDS-PAGE)	Lyophilized from 10 mM Sodium Phosphate, 150 mM Sodium Chloride, pH 7.4 ± 0.1
A0724	95% (SDS-PAGE)	10 mM Sodium Phosphate, 150 mM Sodium Chloride, 0.05% Sodium Azide, pH 7.2 ± 0.1
A0713	50% (Abbott IMx/Total Protein)	Lyophilized from 10 mM Sodium Phosphate, 150 mM Sodium Chloride, 0.05% Sodium Azide, pH 7.2 ± 0.1
A0723	50% (Abbott IMx/Total Protein)	10 mM Sodium Phosphate, 150 mM Sodium Chloride, 0.05% Sodium Azide, pH 7.2 ± 0.1

Source
A2414: Human Hepatoma Cell Line
A0724, A0713, & A0723: Human Cord Serum

AFP/Protein Content: Determined by Abbott IMx (WHO 1st IS 72/225) and by either Lowry or Bio-Rad Protein Assay (BSA standard)

Storage: 2-8°C short term
-10°C to -25°C long term

Biohazard: At a minimum, the above products are tested and found negative for HIV-1, HIV-2, Hepatitis B, and HCV. Other tests can be performed as needed.

AFP Antibodies

	Catalog Number	Purification Method
Monoclonal to AFP	MA075	Ion-exchange chromatography

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Neuron Specific Enolase (NSE)

Neuron Specific Enolase (NSE) is the most abundant form of the glycolytic enzyme enolase found in adult neurons and is thought to serve as a growth factor in neurons. Of the three enolase subunits (α , β , and γ), NSE is a dimer composed of two α subunits.

NSE is useful in studying neuronal differentiation and is, therefore, a valuable tool for visualizing the entire nervous and neuroendocrine systems. Serum levels of NSE have been associated with such disease states as Alzheimer's, Huntington's Chorea, neuroblastoma, head trauma, neuroendocrine malignancies, and small cell carcinomas of the lung.

Catalog Number	Purity (SDS-PAGE)	Protein	Activity
N0224	95%	0.5 mg/ml	Reported as assayed
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Source:	Human Brain		
Form:	100 mM Tris-HCl, 5 mM Magnesium Sulfate, 250 mM Potassium Chloride, adjusted to pH 5.1 \pm 0.1 using Sodium Phosphate		
Protein/Content:	Determined by $A_{280}^{1\%} = 8.95$		
Unit Definition:	One unit causes the formation of 1 μ mole of phosphoenolpyruvate per minute at pH 6.8 and 25°C.		
Storage:	-70°C		
Biohazard:	At a minimum, the above products are tested and found negative for HIV-1, HIV-2, Hepatitis B, and HCV. Other tests can be performed as needed.		

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Prostate Specific Antigen (PSA)

Prostate Specific Antigen (PSA), a glycoprotein of the glandular kallikrein family, is a serine protease with chymotrypsin-like enzymatic activity. It is approximately 33,000 - 34,000 MW and is primarily found in prostate tissue and seminal fluid. Serum levels of PSA are very low in healthy individuals (0-4 ng/ml), but are often elevated in malignant and benign prostatic disease. As such, immunoassays for serum levels of PSA have proven useful in the diagnosis and follow-up of prostate cancer.

PSA Antigen

Catalog Number	Purity (SDS-PAGE)	Form
P0715	99%	Lyophilized from 50 mM Ammonium Bicarbonate; may contain traces of buffer salt
P0725	99%	10 mM Tris, 0.1% Sodium Azide, pH 8.0 ± 0.1
P0714	95%	Lyophilized from 10 mM Tris, 0.1% Sodium Azide, pH 8.0 ± 0.1
P0724	95%	10 mM Tris, 0.1% Sodium Azide, pH 8.0 ± 0.1
P0723	40%	10 mM Tris, 0.1% Sodium Azide, pH 8.0 ± 0.1
Special Non-Complexing PSA		
P5125*	98%	10 mM Tris, 0.1% Sodium Azide, pH 8.0 ± 0.1
P5124**	95%	10 mM Tris, 0.1% Sodium Azide, pH 8.0 ± 0.1
*P5125 has been tested for non-reactivity to ACT and A2M.		
**P5124 has been tested for non-reactivity to ACT.		
Source:	Human Seminal Fluid	
Protein/Content:	Determined by Hybritech Tandem-E PSA	
Storage:	2-8°C short term -10°C to -25°C long term	
Biohazard:	At a minimum, the above products are tested and found negative for HIV-1, HIV-2, Hepatitis B, and HCV. Other tests can be performed as needed.	

PSA Antibodies

	Catalog Number	Purification Method
Goat anti PSA	GP079	Immunoaffinity chromatography
Goat anti PSA	GP075	Ion-exchange chromatography
Monoclonal to PSA ¹	MP077	Protein A chromatography
Monoclonal to PSA-ACT	MP067	Protein A chromatography
¹ Note: Specificities of our Monoclonals to PSA include Free PSA and Total PSA (Total PSA = Free PSA + PSA-ACT + PSA-A2M); please inquire.		

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PSA Complexes

- PSA - 1-Antichymotrypsin (PSA-ACT)
- PSA - 2-Macroglobulin (PSA-A2M)

Prostate Specific Antigen (PSA) released into circulation is present as unbound, free PSA (fPSA) or bound to serum protease inhibitors, such as 1-antichymotrypsin (ACT) and 2-macroglobulin (A2M). Research indicates that immunoassays for serum levels of PSA alone cannot be relied on to distinguish prostate cancer from benign prostatic hyperplasia (BPH). Serum levels of the PSA-ACT complex are reportedly higher in patients with prostate cancer than in those with BPH. As such, measuring the ratio of PSA-ACT to uncomplexed, free PSA in patient samples is proving valuable in the differential diagnosis of prostate cancer. In addition, immunoassays for PSA-A2M serum levels may prove valuable in prostate cancer diagnosis, but further study is required.

PSA-ACT Antigen

	Catalog Number	Purity (SDS-PAGE)	Activity
	P0625	99%	0.3 - 0.7 PSA content/Total Protein ratio
	P0624	95%	0.3 - 0.7 PSA content/Total Protein ratio
Source:	PSA from Human Seminal Fluid ACT from Human Plasma		
Form:	10 mM Sodium Acetate, 150 mM Sodium Chloride, 0.1% Sodium Azide, pH 5.6 ± 0.1		
Protein/Content:	Total protein determined by A280 PSA content determined by Hybritech Tandem-E PSA		
Storage:	2-8°C short term -10°C to -25°C long term		

PSA-A2M Antigen

	Catalog Number	Purity (SDS-PAGE)	Activity
	P5824	Reported as assayed	Report free A2M activity
Source:	PSA from Human Seminal Fluid A2M from Human Plasma		
Form:	20 mM Sodium Phosphate, 150 mM Sodium Chloride, 0.05% Sodium Azide, pH 7.4 ± 0.1		
Protein/Content:	Total protein determined by Bio-Rad Protein Assay (A2M standard)		
Storage:	2-8°C Do Not Freeze		

Biohazard: At a minimum, the above products are tested and found negative for HIV-1, HIV-2, Hepatitis B, and HCV. Other tests can be performed as needed.

PSA Complex Antibodies

Antibodies to PSA Complexes are listed on the PSA page in this section of our On-Line Product Guide.

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Prostatic Acid Phosphatase (PAP)

Prostatic Acid Phosphatase (PAP) catalyzes the dephosphorylation of organic monophosphate esters, demonstrating optimum activity at acidic pH. Produced by the prostatic epithelium, serum levels of PAP are very low in healthy individuals (0 - 5 ng/ml), but are often elevated in malignant and benign prostatic disease. As such, immunoassays for PAP serum levels are useful in monitoring disease progression in prostate cancer.

Catalog Number	Purity (SDS-PAGE)	Protein	Form
P0514	98%	Determined prior to lyophilization	Lyophilized from 5 mM Sodium Phosphate, 15 mM Sodium Chloride, pH 7.6 ± 0.1
P0524	98%	1.0 mg/ml	10 mM Tris, 150 mM Sodium Chloride, 0.1% Sodium Azide, pH 7.2 ± 0.1

Source: Human Seminal Fluid
Protein/Content: Determined by Lowry (BSA standard)
Storage
 P0514: 2-8°C short term
 -10°C to -25°C long term
 P0524: 2-8°C Do Not Freeze
Biohazard: At a minimum, the above products are tested and found negative for HIV-1, HIV-2, Hepatitis B, and HCV. Other tests can be performed as needed.

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