Tumor Associated Antigen (TAA) Array, 60-plex (#PA026)

Serial#	Antigen ID	Antigen Name	UniProt ID	Gene ID	Description
1	14-3-3 theta	14-3-3 protein theta	P27348	YWHAQ	An autoantibody to 14-3-3 theta (also called 14-3-3η or YWHAQ) is a specific antibody our immune system makes against the 14-3-3 theta protein, often studied as a potential **biomarker for early detection of lung cancer**, appearing before symptoms, and also linked to autoimmune diseases like rheumatoid arthritis (RA) and juvenile arthritis (JIA), potentially indicating disease
2	AFP	Alpha-fetoprotein	P02771	AFP	Alpha-fetoprotein (AFP) autoantibodies are antibodies our immune system makes against AFP, a protein normally present in fetuses but usually low in adults, often indicating issues like **liver cancer** (HCC), liver disease, or even autoimmune conditions, as AFP's altered forms can trigger autoimmunity, making these autoantibodies potential biomarkers alongside AFP itself for cancer detection or understanding immune responses. AFP autoantibodies, especially in panels with AFP, can improve early cancer detection (like HCC) because they appear early in
3	AMACR (P504S)	Alpha-methylacyl-CoA racemase	Q9UHK6	AMACR	AMACR (alpha-methylacyl-CoA racemase) is a protein overexpressed in many cancers, especially prostate and colorectal. Autoantibodies against AMACR, together with other autoantibodies, can be used as specific diagnostic panels for cancer diagnosis and prognosis, especially for early cancer detection via liquid biopsy.
4	ANXA1	Annexin A1	P04083	ANXA1	Annexin A1 (AnxA1) autoantibodies are antibodies our immune system makes against the AnxA1 protein. AnxA1 autoantibodies in **cancer** are complex, some autoantibodies against AnxA1 (like anti-SSCA1) might actually signal better anti-tumor immunity and slower cancer development, though more research is needed. AnxA1's role shifts from anti-inflammatory to pro-tumor in cancer, influencing immune cells and the tumor microenvironment, but its
5	ANXA2	Annexin A2	P07355	ANXA2	Annexin A2 (ANXA2) autoantibodies are relevant in **cancer** as ANXA2 is often overexpressed in tumors, promoting proliferation, invasion, and therapy resistance, making it a **potential biomarker** and immunotherapy target, while autoantibodies against it can signal its presence and may be part of the immune response, indicating ANXA2's role in immune evasion or as an antigen for targeted therapy development.
6	BMI-1	B lymphoma Moloney murine leukemia virus insertion region 1/Polycomb complex protein BMI-1	P35226	BMI1	BMI-1 autoantibodies show promise as potential, non-invasive biomarkers for cancer diagnosis and prognosis, particularly in cancers like cervical carcinoma, where their presence in blood (serum) correlates with tumor presence and severity, reflecting the body's immune response to the overexpressed oncogene BMI-1 in tumors. High levels of BMI-1 autoantibodies (or circulating BMI-1 mRNA) have been linked to more advanced disease stages and poorer
7	BRCA1	Breast cancer type 1 susceptibility protein	P38398	BRCA1	A BRCA1 autoantibody is an antibody our immune system makes against the BRCA1 protein, a key tumor suppressor involved in DNA repair; their presence in blood can signal early cancer, especially **breast or ovarian cancer**, acting as potential biomarkers for detection and prognosis, often studied in combination with other autoantibodies, though still largely in research phases. Autoantibodies to BRCA1 (and other proteins like PARP1) can appear in blood before
8	BRCA2	Breast cancer type 2 susceptibility protein	P51587	BRCA2	A BRCA2 autoantibody is an antibody our immune system makes against the BRCA2 protein, which normally helps repair DNA; these autoantibodies can appear in some cancers (like breast, ovarian, pancreatic), potentially signaling the disease or being part of an autoimmune response, and researchers use them as biomarkers or to study how defective BRCA2 repair affects cancer cells, with some even finding certain lupus autoantibodies toxic to BRCA2-deficient tumors. Elevated levels of autoantibodies against BRCA2 (and BRCA1/PARP1) in patients with certain
9	CA 125/MUC16	Ovarian carcinoma antigen CA125/Mucin-16	Q8WXI7	MUC16	CA125 autoantibodies are antibodies our immune system makes against the CA125 protein (a tumor marker for ovarian cancer), and testing for these antibodies alongside the CA125 protein shows great promise for earlier and more accurate **ovarian cancer detection**, especially in early stages where CA125 alone can be misleading, often revealing complex interactions that improve distinguishing cancer from benign conditions. CA125 alone misses many early cancers. Combining it with anti-CA125 and other autoantibodies (like TP53, IL-8) significantly boosts the
10	CA 15-3/MAGEA3/Mucin-1	Breast carcinoma-associated antigen DF3, Melanoma-associated antigen 3	P43357	MAGEA3	CA15-3 is a protein fragment (from MUC-1) used as a tumor marker, mainly for monitoring advanced breast cancer. Autoantibodies against tumor antigens like CA15-3 is a new tools to improve early detection, often combined with the traditional CA15-3 test for better sensitivity in diagnosing and tracking **breast cancer** and other conditions where MUC-1 is involved, like lung disease. Newer research shows promise in improving sensitivity and specificity (e.g.,
11	CA 19-9	Carbohydrate antigen 19-9/Cancer antigen 19-9/ Sialylated Lewis (a) antigen.	Q969X2	ST6GALNAC6	Autoantibodies to CA19-9 (Carbohydrate Antigen 19-9) refer to our body's immune response against the CA19-9 protein, which is usually a cancer biomarker, and these antibodies can be measured to help detect cancers like **pancreatic or cervical cancer**, or diagnose autoimmune conditions (like IgG4-RD). The autoantibodies against CA19-9 antigen or related markers are used for more advanced diagnostics, often in combination with other markers for better accuracy, as autoantibodies can signal **early cancer** or inflammatory issues. It can be used as "tumour-associated autoantibodies" (TAAbs) for early **cancer detection**, potentially appearing
12	CA 242	Cancer Antigen 242 (CA242), carbohydrate antigen 242	Q02817	MUC2	Autoantibodies to CA242 refer to our immune system making antibodies (proteins) that mistakenly target the CA242 antigen, a carbohydrate marker often elevated in **cancers like pancreatic and colorectal**, as well as some inflammatory conditions, with these autoantibodies potentially acting as diagnostic markers or reflecting disease processes, though CA242 itself is more commonly measured as a tumor marker in serum. The presence of autoantibodies against CA242 (or its related MUC1 structures) suggests an immune response, potentially useful for **early cancer detection** or understanding autoimmune links, but it's the antigen (CA242) levels that are clinically used for monitoring, with autoantibodies being part of ongoing research into
13	CA 27-29	MUC-1, CA 27-29, Breast Tumor protein	P15941	MUC1	Autoantibodies to CA 27-29 refer to our immune system making antibodies against the CA 27-29 antigen, a protein often linked to **breast cancer and other cancers**, with research exploring these autoantibodies as early, non-invasive biomarkers for cancer detection, prediction, and monitoring recurrence. Autoantibodies to CA 27-29 may indicate an immune response to the tumor. Research suggests these autoantibodies appear early, potentially before symptoms,
14	CA 50	CA-50, Cancer Antigen 50, carbohydrate antigen 50			Cancer Antigen 50 (CA50) is a tumor-associated carbohydrate marker, similar to CA19-9, used in detecting **gastrointestinal cancers (pancreatic, colorectal)** and monitoring disease, but it's not highly specific, appearing in benign conditions like pancreatitis too. The "CA50 autoantibody" refers to the body's natural immune response where the immune system produces antibodies against the CA50 antigen on cancer cells, acting as **potential early biomarkers**, though CA50 itself is the target antigen measured in blood tests. These autoantibodies, when detected, signal an immune reaction to tumors, offering potential for early screening before symptoms appear, and their signatures (panels of autoantibodies) are promising for diagnosis and monitoring. These autoantibodies circulate in the blood and signal that the body is reacting to the cancer,

15	CA 72-4	Cancer Antigen 72-4, tumor-associated glycoprotein-72 (TAG72-4)	Q9XVS1	tag-72	Cancer Antigen 72-4 (CA72-4) is a tumor-associated glycoprotein (TAG-72) used as a biomarker, primarily for **monitoring gastrointestinal (gastric, colorectal) and ovarian cancers**, though not for initial diagnosis or screening in healthy people, as elevated levels can fluctuate without cancer. The immune system can also produce autoantibodies against cancer antigens like TAG-72, which might appear early in tumor development, potentially aiding early detection. These autoantibodies can appear in blood years before cancer symptoms, offering a pathway for very
16	CAGE1	Cancer-associated gene 1 protein	Q8TC20	CAGE1	The Cancer Antigen Gene (CAGE), also known as CAGE-1, is a **Cancer/Testis** Antigen (CTA) identified by its expression in various **cancers (like gastric, melanoma)** but normally only in the testis, making it a prime target for cancer vaccines and immunotherapy. CAGE promotes tumor growth by accelerating cell division (via cyclins D1/E), enhancing cell motility (through FAK/ROCK pathways), conferring drug resistance (by downregulating p53), and inducing
17	CATD/CTSD	Cathepsin D	P07339	CTSD	Cathepsin D (Cath-D) autoantibodies are being explored as potential non-invasive **biomarkers for cancer diagnosis and prognosis** because their levels often rise as cancer progresses, correlating with tumor aggressiveness in **various cancers like breast, prostate, lung, and leukemia**. These autoantibodies target the precursor form (procathepsin D) secreted by tumors, offering a blood-based way to detect cancer-related changes, potentially serving as a cost-
18	CCNA2	Cyclin-A2	P20248	CCNA2	CCNA2 (Cyclin A2) is a cell cycle protein overexpressed in many **cancers (lung, breast, liver, CRC, etc.)** and acts as a biomarker for tumor proliferation, prognosis, and immunotherapy response. Anti-CCNA2 autoantibodies may serve as potential markers for early cancer screening and treatment guidance
19	CCNB1	G2/mitotic-specific cyclin-B1	P14635	CCNB1	Cyclin B1 autoantibodies show promise as **cancer biomarkers** because this cell cycle protein is overexpressed and mislocalized (cytoplasmic) in many tumors, triggering an immune response even before clinical signs, detectable in blood. Studies show these antibodies (IgG, IgA, IgM) are present in **lung, breast, prostate, and other cancer**s, potentially aiding **early detection and diagnosis**, though often used in panels with other tumor-associated antigens (TAAs) for better
20	CCND1	Cyclin D1	Q6FI00	CCND1	Cyclin D1 autoantibodies show promise as non-invasive **biomarkers for cancer diagnosis**, particularly in **thyroid cancers and certain lymphomas**, by detecting the body's immune response to overexpressed Cyclin D1 protein, a common feature in many cancers (breast, lung, melanoma, etc.). While Cyclin D1 protein expression itself is used in tissue biopsies (like immunohistochemistry) for diagnosing Mantle Cell Lymphoma (MCL) and guiding breast cancer prognosis, the corresponding autoantibodies in blood offer a stable, **early detection** method, though research is still in preclinical/early clinical stages for widespread use, often needing
21	CDK2	Cyclin-Dependent Kinase 2	P24941	CDK2	CDK2 autoantibodies are naturally produced by the immune system against the cell cycle protein CDK2, which is often overactive in **cancers**; these autoantibodies can act as potential **biomarkers for early cancer detection and prognosis**, as their presence might signal tumor development even before symptoms appear, though sensitivity and specificity remain challenges, with research focusing on their combination to improve accuracy, especially in breast cancer. While CDK2 itself is a cancer drug target, its autoantibodies offer an immune-
22	CEA	Carcinoembryonic antigen	Q13985	CEA	An autoantibody to CEA (Carcinoembryonic Antigen) is an antibody our immune system makes that mistakenly targets CEA, a protein often elevated in **cancers (like colorectal)** and inflammation, and while usually low-titer, these autoantibodies can serve as potential **biomarkers for early cancer detection**, especially when combined with other markers like anti-CA15-3 and anti-CA19-9, indicating the body's immune response to cancer cells expressing CEA. Anti-CEA autoantibodies, along with others (anti-CA15-3, anti-CA19-9), show promise in reliably
23	c-myc	Myc proto-oncogene protein	P01106	MYC	C-Myc autoantibodies show promise as non-invasive **biomarkers for diagnosing various cancers, including lung, liver (HCC), and esophageal cancers**, often detecting early-stage disease by reflecting tumor activity, as the c-Myc protein is frequently overexpressed in tumors, triggering the immune system to produce these antibodies, which can then be found in blood. While single antibodies have limitations, panels combining anti-c-Myc with other autoantibodies and miRNAs boost sensitivity and specificity, aiding in early detection, prognosis,
24	DDX53	Probable ATP-dependent RNA helicase DDX53	Q86TM3	DDX53	DDX53 autoantibodies are immune responses targeting the DDX53 protein, a molecule highly expressed in various **cancers (like esophageal, gastric, lung)** and involved in cancer stem cell properties, making it a potential target for immunotherapy and cancer diagnostics. Research shows these autoantibodies can increase after immune-cell therapy, possibly indicating effectiveness, and they are being studied as **biomarkers for cancer**. DDX53's role extends to regulating stemness and drug resistance in cancers, and genetic variations in DDX53 have also
25	DKK-1	Dickkopf-related protein 1	O94907	DKK1	DKK-1 autoantibodies show promise as **diagnostic and prognostic biomarkers for various cancers, including lung (NSCLC) and esophageal cancers**, as their levels are often elevated in patients and correlate with tumor progression, metastasis (especially bone), and poorer outcomes, helping differentiate cancer patients from healthy controls, though DKK-1's role (suppressor vs. promoter) varies by cancer type, with current research focusing on its subtypes
26	ErbB2/Her2	Receptor tyrosine-protein kinase erbB-2	P04626	ERBB2	The autoantibody to ERBB2 (also known as HER2) is a naturally occurring antibody our immune system makes against the HER2 protein, a cell growth receptor, which is relevant in **breast cancer** as HER2 overexpression drives some aggressive tumors, but these natural anti-HER2 autoantibodies (HER2-AAb) often signal better outcomes, reducing cancer risk and improving survival by potentially helping the immune system fight cancer, unlike the therapeutic antibodies like Herceptin which target the same protein. Detecting these natural autoantibodies
27	ErbB3/Her3	Receptor tyrosine-protein kinase erbB-3	P21860	ERBB3	An autoantibody to ERBB3 (also known as HER3) is an antibody our immune system makes against the ErbB3 protein, a receptor involved in cell growth, often seen in autoimmune conditions like Chronic Hepatitis B (CHB) where it targets ErbB-3-binding protein-1 (EBP-1), and relevant in Type 1 Diabetes (T1D) risk, but also a target for **cancer** therapies to block signaling. Research shows anti-ErbB3 antibodies can be **biomarkers for disease severity** and are being developed as treatments, sometimes as mixtures, to inhibit cancer growth by blocking ErbB3 signals. Autoantibodies against ErbB3 or its related proteins can serve as **indicators of disease**
28	ErbB4	Receptor tyrosine-protein kinase erbB-4	Q15303	ERBB4	ErbB4 (HER4) is a receptor tyrosine kinase with complex, often paradoxical roles in cancer, acting as both a tumor suppressor and promoter, and is found in many **cancers like breast, lung, and colorectal**. While ErbB4 antibodies (like monoclonal antibodies) are explored as therapies to block its growth-promoting signals, the presence of naturally occurring ErbB4 autoantibodies (tumor-associated antibodies) is being investigated as potential **biomarkers for cancer diagnosis, prognosis, and predicting response to immunotherapies**, highlighting its
29	GAGE7	G antigen 7	O76087	GAGE7	An autoantibody to GAGE7 (Gamma-aminobutyric acid receptor-associated protein 7) is a specific antibody our immune system makes against the GAGE7 protein, often studied as a potential **biomarker for early lung cancer detection,** especially when combined with other autoantibodies like P53, SOX2, MAGEA1, etc., showing promise for improved diagnosis and screening, though it often has higher specificity than sensitivity alone

30	Gal-3/LEG3	Galectin-3	P17931	LGALS3	Galectin-3 (Gal-3) autoantibodies are being studied as **potential biomarkers and therapeutic targets in cancer**, with research suggesting they can predict chemotherapy response (like platinum-based for lung cancer) and influence disease progression, often showing complex roles where high intact Gal-3 levels might indicate worse outcomes, while anti-Gal-3 autoantibodies (especially IgG4) can be present and linked to disease, with Gal-3 itself
31	GBU4-5	Glucose-regulated protein, 78 kDa; ATP-binding RNA helicase with a DEAD-box domain	Q587J7	TDRD12	GBU4-5 is a tumor-associated antigen (TAA) containing a DEAD-box domain, identified through cancer research for its role in **lung cancer** diagnosis. The GBU4-5 autoantibody is a promising tumor-associated biomarker, especially for **lung cancer** (LC), indicating its role as a potential tool for early diagnosis and staging by being significantly elevated in lung cancer patients, particularly in adenocarcinoma and small cell lung cancer (SCLC). It's part of a panel of tumor-associated autoantibodies (TAAbs) like P53, SOX2, and PGP9.5, which, when combined, can improve diagnostic accuracy for early-stage cancers, helping to distinguish them from benign
32	GRP78	78 kDa glucose-regulated protein/Endoplasmic reticulum chaperone BiP/Heat shock protein 70 family	P11021	HSPA5	GRP78 autoantibodies are promising cancer biomarkers, acting as indicators of cancer presence and progression, particularly in prostate, ovarian, colon, and liver (HCC) cancers, because their production is triggered when the normally intracellular protein GRP78 moves to the cell surface under stress, a common cancer trait. These antibodies can signal early tumor formation and, paradoxically, may also promote tumor growth, suggesting a complex role in disease
33	HSP27	Heat shock protein 27			Anti-HSP27 antibodies (especially IgA) are often found in cancer patients but not healthy controls, suggesting they can be a sign of malignancy, particularly in gynecological cancers,
34	HSP60	60 kDa heat shock protein	P10809	HSPD1	HSP60 autoantibodies are increasingly studied as potential cancer biomarkers, showing promise for early diagnosis and prognosis, especially in cancers like breast, colorectal, and ovarian, because elevated levels often correlate with tumor growth, stage, and poorer survival, though their role is complex, potentially acting as a marker of general inflammation or having direct biological effects, requiring more research for standardized clinical use.
35	HSP70-9B/HSPA9/GRP-75	Stress-70 protein, mitochondrial	P38646	HSPA9	HSPA9 (also known as mortalin or GRP75) autoantibodies are recognized as potential circulating biomarkers for cancer diagnosis and prognosis because the immune system produces them in response to the early overexpression and mislocalization of the HSPA9 protein in tumor cells. While HSPA9 protein levels are widely studied across various cancers, its corresponding autoantibodies are particularly valued for their stability in blood samples and potential for early
36	HuD	Hu antigen D; ELAV-like protein 4	P26378	ELAVL4	HuD autoantibodies target the HuD protein (ELAV-like 4), an RNA-binding protein vital for nerve cell function, and are significant markers for **paraneoplastic neurological syndromes (PNS), especially with small cell lung cancer (SCLC)**, indicating an immune attack on the nervous system, often leading to neuron damage, and sometimes seen in inflammatory conditions.
37	IF2B1/IMP1	Insulin-like growth factor 2 mRNA-binding protein 1	Q9NZI8	IGF2BP1	IMP1 autoantibody targets the Insulin-like Growth Factor II mRNA-Binding Protein 1 (IMP1), an RNA-binding protein involved in cell growth, movement, and **cancer**; these autoantibodies appear in some diseases, particularly **cancers (like ovarian, liver)** and potentially autoimmune conditions, acting as potential **diagnostic or prognostic markers** because IMP1 expression often changes in tumors, triggering immune responses.
38	IF2B2/IMP2/IGF2BP2/p62	Insulin-like growth factor 2 mRNA-binding protein 2	Q9Y6M1	IGF2BP2	IMP2 autoantibody targets Insulin-like Growth Factor 2 mRNA-Binding Protein 2 (IMP2/p62), a protein often overexpressed in **cancers like breast, ovarian, and liver cancers**, acting as a tumor-associated antigen (TAA). Detecting these autoantibodies in a patient's blood (serum) shows promise as a **biomarker for early cancer screening and diagnosis** because they appear more frequently in cancer patients than in healthy individuals, indicating the immune system is
39	IF4H	Eukaryotic translation initiation factor 4H	Q15056	EIF4H	The IF4H autoantibody is emerging as a potential biomarker, particularly in prostate cancer (PCa), where it's part of a panel (with PIK3CA, SPOP, HSP60) showing higher levels in patients and differentiating cancer from normal states, with higher frequencies noted in Hispanic and African American patients. While autoantibodies in general can be linked to autoimmune diseases and some cancers, the presence of specific ones like IF4H in cancer suggests they can be used for early detection, monitoring, and understanding tumor-immune interactions, potentially even influencing immunotherapy responses, indicating a complex interplay between
40	IMDH2	Inosine-5'-monophosphate dehydrogenase 2	P12268	IMPDH2	Autoantibodies against inosine-5'-monophosphate dehydrogenase 2 (IMPDH2) are most notably associated with patients treated for chronic hepatitis C virus (HCV) infection with interferon-alpha and ribavirin, a treatment no longer standard. These autoantibodies are known as anti-rods/rings (anti-RR) antibodies due to the distinctive intracellular structures they target.IMPDH2 itself is also being studied as a **potential biomarker for certain cancers**, as it is overexpressed in
41	IMP3	Insulin-like Growth Factor 2 mRNA-Binding Protein 3 (IMP3)	O00425	IGF2BP3	IGF2BP3 (Insulin-like growth factor 2 mRNA-binding protein 3) is an oncofetal protein highly expressed in many cancers, acting as a significant biomarker for diagnosis, prognosis, and tumor progression in cancers like gastrointestinal, lung, bladder, and leukemia, correlating with aggressive features, poor survival, and metastasis. While research focuses on protein/mRNA levels in tissue (IHC, qPCR), the role and detection of IGF2BP3 autoantibodies specifically for diagnosis are less detailed in these snippets but are implied as **potential diagnostic tools**, alongside its established role as a protein biomarker, to **improve cancer detection and**
42	KOC/IF2B3	KOC (K homology domain containing protein overexpressed in cancer) /Insulin-like growth factor 2 mRNA-binding protein 3	O00425	IGF2BP3	KOC (K homology domain containing protein overexpressed in cancer) is a protein linked to various cancers, especially pancreatic, where its elevated expression acts as a marker for malignancy; researchers explore KOC autoantibodies (antibodies the body makes against KOC) as potential cancer biomarkers, as they appear in some cancer patients, though often in low frequencies, and can be part of panels with other tumor antigens (like NY-ESO-1, Survivin, p62) to improve cancer screening and diagnosis, though more validation is needed
43	LAMR1	Small ribosomal subunit protein uS2	P08865	RPSA	LAMR1 autoantibodies are antibodies the body makes against the Laminin Receptor 1 (LAMR1) protein, often acting as **potential biomarkers for early lung cancer detection**, particularly lung adenocarcinoma, appearing before symptoms and potentially aiding in risk assessment in high-risk individuals like smokers. LAMR1 itself promotes cancer growth, so these autoantibodies signal an immune response to it, suggesting early tumor development, and are studied
44	MAGEA1	Melanoma-associated antigen 1	P43355	MAGEA1	An autoantibody to MAGEA1 (Melanoma-Associated Antigen A1) is an antibody our immune system makes against the MAGEA1 protein, which is normally found in testes but often appears in **cancers**, making it a Tumor-Associated Autoantibody (TAAB), useful in blood tests for **detecting and monitoring cancers like lung cancer or esophageal cancer**, often in combination with other TAABs, and also studied as targets for cancer immunotherapies like TCR T-cell
45	MAGEA4	Melanoma-associated antigen 4	P43358	MAGEA4	MAGEA4 autoantibodies are antibodies our immune system makes against the MAGE-A4 protein, a **"cancer-testis antigen"** normally silent in adults but reactivated in many **cancers (lung, synovial sarcoma, etc.)**. These autoantibodies are promising for **early cancer detection** (liquid biopsy biomarker) and monitoring, as their presence indicates immune response to tumors, guiding therapies like engineered T cells (e.g. afami-cel) targeting MAGE-A4-positive

46	**NY-ESO-1**	Cancer/testis antigen 1, Autoimmunogenic cancer/testis antigen NY-ESO-1	P78358	CTAG1A; CTAG1B	NY-ESO-1 autoantibodies are antibodies the immune system makes against the NY-ESO-1 protein, a cancer/testis (CT) antigen aberrantly expressed in many **tumors (like lung, breast, prostate, melanoma, ovarian cancers)** but normally only in testes. Their presence in blood signifies an ongoing immune response to NY-ESO-1-expressing tumors, making them valuable as **potential biomarkers for early cancer detection, monitoring disease progression/recurrence (levels drop after successful treatment), and guiding immunotherapy**. These antibodies often appear alongside T-cell responses, indicating strong anti-tumor immunity, and are crucial
47	**P53**	Cellular tumor antigen p53	P04637	TP53	p53 autoantibodies (p53-AAb) are antibodies the immune system makes against the body's own p53 tumor suppressor protein, often found in blood of cancer patients, especially with TP53 gene mutations, signaling aberrant p53 protein accumulation due to DNA damage or tumor development. While primarily a marker for various **cancers (like ovarian, lung, liver)**, indicating worse prognosis, they're rarely seen in autoimmune diseases, and their presence suggests altered cell biology, helping in **diagnosis and monitoring**, though not always 100% specific for
48	PAP	Prostatic Acid Phosphatase (PAP)	P15309	ACP3	Prostatic Acid Phosphatase (PAP) autoantibodies are our immune system's antibodies targeting PAP, a prostate enzyme, and can signal **prostate** issues like **cancer** or inflammation, acting as potential **biomarkers for diagnosis**, though less common now than PSA tests; researchers study them to understand autoimmune responses and find new diagnostic tools, with specific anti-PAP antibodies helping identify PAPs structure and location in tissues
49	Paxillin	Paxillin	P49023	PXN	Paxillin, a focal adhesion protein, is often overexpressed in many cancers, promoting tumor growth, invasion, and metastasis, acting as an oncogene, and correlating with poor survival, though its expression varies by cancer type. While research focuses heavily on paxillin protein in tumors, paxillin autoantibodies (antibodies made by the body against paxillin) are emerging as promising **diagnostic/prognostic biomarkers for early cancer detection**, as they appear in serum before tumors are obvious and are stable, offering a blood-based tool for **monitoring**
50	PGAM1	Phosphoglycerate mutase 1	P18669	PGAM1	PGAM1 (Phosphoglycerate mutase 1) is a glycolytic enzyme often overexpressed in many cancers (glioma, lung, breast, gastric, prostate), linked to poor prognosis and metastasis, making its protein a potential diagnostic target. PGAM1 autoantibodies (antibodies against PGAM1) are being investigated as non-invasive blood **biomarkers for early cancer detection, prognosis, and monitoring**, acting as a biological amplifier of the cancer signal, with research focusing on their
51	PGP9.5/UCH1L	Ubiquitin carboxyl-terminal hydrolase isozyme L1	P09936	UCHL1	An autoantibody to PGP9.5 (Protein Gene Product 9.5, also known as UCHL1) targets this neuron-specific protein, often indicating Small Fiber Neuropathy (SFN), a condition causing nerve pain, especially in immune-mediated diseases or pre-diabetes. These antibodies are also explored as potential **biomarkers for lung cancer**, showing increased presence in advanced stages, suggesting a role in diagnosis or staging. PGP9.5 is a ubiquitin hydrolase vital for neuron function, and its presence in various tissues makes autoantibodies useful for **diagnosing**
52	PIK3CA	Phosphatidylinositol 4,5-bisphosphate 3-kinase catalytic subunit alpha isoform	P42336	PIK3CA	PIK3CA gene mutations are well-known drivers of various cancers (like breast, colon, endometrial). The presence of autoantibodies might indicate the immune system recognizing altered PIK3CA protein or related cancer-specific changes
53	PSA	Prostate Specific Antigen (PSA)	P07288	KLK3	Prostate-specific antigen (PSA) autoantibodies are antibodies the immune system makes against PSA, a protein produced by the **prostate**, often indicating prostate issues like **cancer**, prostatitis, or benign prostatic hyperplasia (BPH). These autoantibodies, like anti-PSA antibodies (AAPSA), can alter standard PSA test results, creating both diagnostic challenges and potential as new biomarkers, showing promise for improved **prostate cancer** screening when used
54	PSMA	Prostate Specific Membrane Antigen; Glutamate carboxypeptidase 2	Q04609	FOLH1	Prostate-Specific Membrane Antigen (PSMA) autoantibodies are immune responses the body makes against PSMA, a protein highly expressed in **prostate cancer** and on normal prostate cells, used in diagnostics (PSMA PET scans) and therapies. While PSMA itself is a target, autoantibodies against PSMA can also form, sometimes interfering with PSA tests (false negatives) but also acting as potential **diagnostic biomarkers for cancer** or inflammatory conditions like chronic prostatitis, indicating immune involvement in prostate disease. Research
55	RCVRN	Recoverin	P35243	RCVRN	An autoantibody to recoverin is an immune marker indicating a rare cancer-related condition, primarily **Cancer-Associated Retinopathy (CAR)**, where the body attacks its own eye cells (photoreceptors), causing vision loss, often linked to cancers like small cell lung cancer, even before the tumor is found. These antibodies attack the recoverin protein, which is normally in the retina, but aberrantly expressed in tumors, leading to photoreceptor apoptosis (cell death)
56	SOX2	SRY-box transcription factor 2; Transcription factor SOX-2	P48431	SOX-2	SOX2 autoantibodies are antibodies our immune system makes against the SOX2 protein, crucial for stem cells and development, often appearing in **cancers like Small Cell Lung Cancer (SCLC) and Breast Cancer**, acting as potential noninvasive **biomarkers for diagnosis/prognosis**, but also linked to rare developmental disorders when antibodies target SOX2 genetically, like in SOX2 anophthalmia syndrome. While research uses SOX2 antibodies (not autoantibodies) extensively in labs to find the protein in stem cells and tumors, SOX2 autoantibodies in patients
57	SPOP	Speckle-type POZ protein	O43791	SPOP	SPOP acts as a tumor suppressor in some cancers (like prostate, endometrial) by degrading harmful proteins, but its mutations can lead to cancer. Autoantibody targeting the SPOP protein, is a potential biomarker for cancers like prostate cancer, where SPOP is frequently mutated, and its protein can become immunogenic, triggering an immune response and autoantibody production, suggesting new diagnostic tools
58	SSX-2	Protein SSX2/Cancer-Testis Antigen (CTA)	Q16385	SSX2; SSX2B	SSX-2 autoantibodies are antibodies produced by the immune system against the SSX-2 protein, a Cancer-Testis Antigen (CTA) aberrantly expressed in many tumors but normally only in the testis, making it a promising target for cancer immunotherapy. The presence of these autoantibodies in patients signifies an immune response to the tumor, potentially influencing disease control, though their exact role (beneficial or detrimental) is still under investigation,
59	Survivin	Survivin	O15392	BIRC5	An autoantibody to Survivin is an antibody our immune system makes against the internal protein Survivin, which normally helps cells live (inhibits apoptosis) but is often overexpressed in cancers, making it a **tumor antigen**; these autoantibodies are studied as potential **diagnostic biomarkers for various cancers (like lung, breast, brain)** and even some autoimmune diseases (like systemic sclerosis, RA), though their presence varies and isn't always consistently sensitive
60	UBQL1	Ubiquilin-1	Q9UMX0	UBQLN1	UBQL1 (Ubiquilin 1) autoantibodies are linked to cancer as part of the body's immune response, potentially serving as **biomarkers for diagnosis, especially in lung cancer**, and reflecting the presence of UBQLN1, a protein often overexpressed in many **cancers (like gastric, breast, lung)** where it promotes tumor growth, metastasis, and resistance to treatment. The autoantibodies themselves indicate a humoral response to this tumor-associated protein, suggesting UBQLN1's complex role in cancer progression and its potential as a diagnostic target. The presence of UBQLN1 autoantibodies in the blood signals the body's recognition of UBQLN1 as foreign or
61		Ig control 1			
62		Ig control 2			
63		Ig control 3			
64		Ig control 4			

65		anti-Ig control 1			
66		anti-Ig control 2			
67		anti-Ig control 3			
68		anti-Ig control 4			