

# Kits and tools to study: Immunotherapy

TIGIT Pathway | PD-1 Pathway | IDO Pathway

## Immunotherapy

The immune system is a system of cells and organs whose function is to defend an organism from foreign pathogens. With the ability to mount a response against virtually any foreign material and return to a quiescent state following neutralization of the threat, this fascinating organ system displays remarkable specificity and plasticity. To achieve this, there is a multifaceted balancing act between the many activators and suppressors that maintains homeostasis of perhaps the body's most complex organ system. Activation of the immune system involves a number of checkpoints in order to ensure proper activation. For instance, T cell activation requires binding of the T cell receptor to the MHC antigen, yet this interaction alone is not sufficient for producing a T cell response. Full T cell activation and inactivation requires the coordination of a multitude of co-stimulatory and inhibitory signals. For example, T cell activation can result from the combination of MHC:TCR and B7-1:CD28 interaction. In contrast, B7-1 binding to CTLA4 results in an inhibitory signal that prevents activation.

### IDO pathway

Immune evasion is one of the identifying hallmarks of cancer, and researchers are trying to identify the complex mechanisms that enable cancer cells to evade the host's immune system. Cancer cells use the indoleamine 2,3-dioxygenase (IDO) pathway to suppress the host's immune response in order to facilitate survival, growth, invasion, and metastasis of malignant cells. The IDO pathway is active in many tumors, providing a direct defense against T cell attack. The IDO pathway also is active in many antigen-presenting cells, resulting in peripheral tolerance to tumor-associated antigens.

### PD-1 receptor

The understanding of the checkpoint signaling pathway involving the programmed death 1 (PD-1) receptor and its ligands (PD-L1/2) in tumor-induced immune suppression has been a critical advancement in immunotherapeutic drug development. Tumors that express PD-L1 can often be aggressive and carry a poor prognosis. The anti-PD-1 and anti-PD-L1 agents have a good safety profile and have resulted in durable responses in a variety of cancers, including melanoma, kidney cancer, and lung cancer. The PD-1/PD-L1 pathway in cancer is implicated in tumors escaping immune destruction and is a promising therapeutic target. The development of anti-PD-1 and anti-PD-L1 agents marks a new era in the treatment of cancer with immunotherapies.

## AMSBIO offers:

- Screening Assays
- Neutralizing antibodies
- Proteins
- Screening service

## Immunotherapy Screening Services

AMSBIO provides rapid, dependable Immunotherapy Screening Services of small molecules, peptides, and antibodies against requested wide range of targets by IC50 determination. We also offer Cell-Based Immunotherapy Screening services to determine EC50's or screen for inhibitors of a variety of Immunotherapy proteins – PD-1, IDO1, TDO using our cell-based assays.


Cell lines & Cell based assays	Cat #	Size
ADCC Cell Line, Low Affinity	AMS.60540	2 vials
ADCC Cell Line, High Affinity	AMS.60541	2 vials
CD155 (PVR) - HEK293 Stable Cell Line	AMS.60537	2 vials
CD27 CHO-K1 Stable Cell Line	AMS.60624	2 vials
CD40/NF-kappa B Reporter (Luc) - HEK293 Stable Cell Line	AMS.60626	2 vials
CD47 - HEK293 Cell Line	AMS.71249	2 vials
hIDO1-HEK293 Recombinant Cell line	AMS.60532	2 vials
hTDO-HEK293 Recombinant Cell line	AMS.60534	2 vials
NF-kappa B-Luciferase Reporter (Luc) - Jurkat Cell Line	AMS.60651	2 vials
NF-kappa B Reporter (Luc) - A549 Stable Cell Line	AMS.60625	2 vials
NFAT Reporter (Luc) - Jurkat Cell Line	AMS.60621	2 vials
PD-1/NFAT Reporter - Jurkat Recombinant Cell Line	AMS.60535	2 vials
TCR activator / PD-L1 - CHO Recombinant Cell line	AMS.60536	2 vials
TIGIT / NFAT Reporter - Jurkat Cell Line	AMS.60538	2 vials
PD-1:PD-L1/PD-L2 Cell-Based Inhibitor Screening Assay Kit	AMS.60800	100 reactions
Human IDO1 Cell-Based Assay Kit	AMS.72031	100 reactions
Human TDO Cell-Based Assay Kit	AMS.72033	100 reactions


Neutralizing antibodies	Cat #	Size
CTLA4 (CD152) Neutralizing Antibody	AMS.71212	50 ug
IL-17A Neutralizing Antibody	AMS.91015	100 ug
Anti-PD-1 Neutralizing Antibody	AMS.71120	100 ug
Anti-PD-1 Neutralizing Antibody, Biotin-labeled	AMS.71215	100 ug
Anti-PD-L1 (CD274) Neutralizing Antibody	AMS.71213	100 ug
Anti-PD-L1 Neutralizing Antibody, Biotin-labeled	AMS.71214	100 ug
Anti-TIGIT, Neutralizing Antibody	AMS.71218	100 ug

FACS antibodies	Cat #	Size
Anti-human PD-1, PE-labeled	AMS.71290	50 ug
Anti-PD-L1, PE-labeled	AMS.71128	50 ug
Anti-Human CD274 (PD-L1) Antibody (PE conjugated)	AMS.ESHF321	100tests
Anti-Human CD274 (PD-L1) Antibody (APC conjugated)	AMS.ESHF322	100tests
Anti-Mouse CD274 (PD-L1) Antibody (FITC conjugated)	AMS.ESMF244	0.5mg
Anti-Mouse CD274 (PD-L1) Antibody (PE conjugated)	AMS.ESMF245	0.2mg
Anti-Mouse CD274 (PD-L1) Antibody (APC conjugated)	AMS.ESMF246	0.1mg
Anti-Mouse CD279 (PD-1) Antibody (FITC conjugated)	AMS.ESMF254	0.5mg
Anti-Mouse CD279 (PD-1) Antibody (PE conjugated)	AMS.ESMF255	0.2mg
Anti-Mouse CD279 (PD-1) Antibody (APC conjugated)	AMS.ESMF256	0.1mg

Assay kits	Cat #	Size
BTLA:HVEM (Biotinylated) Inhibitor Screening Assay Kit	AMS.72008	96 reactions
CD226:CD112 Homogeneous Assay Kit	AMS.72051	384 reactions
CD226:CD155 Homogeneous Assay Kit	AMS.72052	384 reactions
CD28:B7-1 (Biotinylated) Inhibitor Screening Assay Kit	AMS.72007	96 reactions
CD28:B7-2[Biotinylated] Inhibitor Screening Assay Kit	AMS.72062	96 reactions
CD47:SIRP-alpha (Biotinylated) Inhibitor Screening Assay Kit	AMS.72044	GBP 1005
CD47:SIRP-gamma [Biotinylated] Inhibitor Screening Assay Kit	AMS.72059	GBP 1005
CD73 Inhibitor Screening Assay Kit	AMS.72058	GBP 1005
CD73 Inhibitor Screening Assay Kit	AMS.72055	96 reactions
CTLA4:B7-1 (Biotinylated) Inhibitor Screening Assay Kit	AMS.72009	96 reactions
CTLA4 (Biotinylated):B7-2 Inhibitor Screening Assay Kit	AMS.72024	96 reactions
GITRL:GITR[Biotinylated] Inhibitor Screening Assay Kit	AMS.72061	96 reactions
Human IDO1 Fluorogenic Inhibitor Screening Assay Kit	AMS.72037	96 reactions
Human IDO1 Fluorogenic Inhibitor Screening Assay Kit (384)	AMS.72047	384 wells
Human IDO1 Inhibitor Screening Assay Kit	AMS.72021	96 Reactions
Human IDO1 Inhibitor Screening Assay Kit (384)	AMS.72034	384 reactions
Human IDO2 Inhibitor Screening Assay Kit	AMS.72022	96 reactions
Human TDO Fluorogenic Inhibitor Screening Assay Kit	AMS.72039	96 reactions
Human TDO Fluorogenic Inhibitor Screening Assay Kit (384)	AMS.72049	384 wells
Human TDO Inhibitor Screening Assay Kit	AMS.72023	96 reactions
Human TDO Inhibitor Screening Assay Kit (384)	AMS.72036	384 reactions
IDO1 Inhibitor Mechanism of Action Assay Kit	AMS.72050	50 reactions
IL-17RA[Biotin]:IL-17A Inhibitor Screening Assay Kit	AMS.72060	96 reactions
Mouse IDO1 Inhibitor Screening Assay Kit	AMS.72041	96 reactions
Mouse IDO2 Inhibitor Screening Assay Kit	AMS.72042	96 reactions
Mouse PD-1 (Biotinylated):PD-L1 Inhibitor Screening Assay Kit	AMS.72027	96 reactions
OX40 (Biotinylated):OX40L Inhibitor Screening Assay Kit	AMS.72045	96 reactions
PD-1:PD-L1 Homogeneous Assay Kit	AMS.72014	384 reactions
PD-1:PD-L1 (Biotinylated) Inhibitor Screening Assay Kit	AMS.72003	96 reactions
PD-1:PD-L1 (Biotinylated) Inhibitor Screening Colorimetric Assay Kit	AMS.72016	96 reactions
PD-1:PD-L2 Homogeneous Assay Kit	AMS.72015	384 reactions
PD-1:PD-L2 TR-FRET Assay Kit	AMS.72012	384 reactions
PD-1:PD-L2 (Biotinylated) Inhibitor Screening Assay Kit	AMS.72004	96 reactions
PD-1:PD-L2 (Biotinylated) Inhibitor Screening Colorimetric Assay Kit	AMS.72017	96 reactions
PD-1 (Biotinylated):PD-L1 Homogeneous Assay Kit	AMS.72028	384 reactions
PD-1 (Biotinylated):PD-L1 Inhibitor Screening Assay Kit	AMS.72005	96 reactions
PD-1 (Biotinylated):PD-L1 Inhibitor Screening Colorimetric Assay Kit	AMS.72018	96 reactions
PD-1 (Biotinylated):PD-L2 Inhibitor Screening Assay Kit	AMS.72006	96 reactions
PD-1 (Biotinylated):PD-L2 Inhibitor Screening Assay Kit	AMS.72006	96 reactions
PD-L1:B7-1 (Biotinylated) Inhibitor Screening Assay Kit	AMS.72026	96 reactions
TIGIT:CD112 Homogeneous Assay Kit	AMS.72030	384 reactions
TIGIT:CD155 Homogeneous Assay Kit	AMS.72029	384 reactions
TPH1 Inhibitor Screening Assay Kit	AMS.72053	96 reactions
TPH1 Inhibitor Screening Assay Kit	AMS.72053	96 reactions
TPH2 Inhibitor Screening Assay Kit	AMS.72054	96 reactions
TPH2 Inhibitor Screening Assay Kit	AMS.72057	384 reactions
Universal IDO1/IDO2/TDO Inhibitor Screening Assay Kit	AMS.72035	96 reactions

Proteins	Cat #	Size
Human Arginase 1 / ARG1 Protein	AMS.AR1-H5228-50ug	50ug
ARG2, His-Tag HiP™	AMS.71659	50ug
B7-1 (CD80), Fc fusion, Biotin-labeled	AMS.71114	50ug
B7-2 (CD86), Fc fusion, Biotin labeled	AMS.71159	50ug
B7-H2 (CD275, ICOSL), Fc fusion	AMS.71130	100 ug
B7-H4, His-tag, Biotin-labeled	AMS.71129	50ug
BTLA(CD272), Fc fusion	AMS.71141	100 ug
CBL-B, His-tag, Biotin-labeled	AMS.80412	50ug
CD112, His-tag, Biotin-labeled	AMS.71234	50ug
Mouse CD137, Fc fusion (mIgG2a), Biotin-labeled	AMS.71255	50 ug
Human CD155 / PVR Protein, Fc Tag	AMS.CD5-H5251-100ug	100ug
Mouse CD155, His-tag, Biotin-labeled	AMS.71168	50 ug
CD160, His-tag, Biotin-labeled	AMS.71135	50 ug
CD27, Fc fusion	AMS.71176	100 ug
CD28H, Fc fusion, Biotin-labeled	AMS.71239	50 ug
Biotinylated Human CD40 / TNFRSF5, His Tag & Fc Tag, Avi Tag (Avitag)	AMS.CD0-H82F2-25ug	25ug
Human CD40 Ligand / TNFSF5 Protein	AMS.CDL-H5140-100ug	100ug
CD47, Fc fusion, Biotin-labeled	AMS.71169	50 ug
Biotinylated Human CTLA-4, Fc Tag, Avi Tag (Avitag)	AMS.CT4-H82F3-25ug	25ug
GITR (CD357), Fc Fusion, Biotin-labeled	AMS.71256	50 ug
Biotinylated Human 4-1BB / TNFRSF9, Fc Tag, ultra sensitivity (primary amine labeling)	AMS.41B-H8258-25ug	25ug
Human CD226, Fc fusion, Biotin-labeled	AMS.71253	50 ug
Human PD-1 / PDCD1 Protein, Fc Tag (HPLC-verified), low endotoxin	AMS.PD1-H5257-100ug	100ug
Biotinylated Human PD-L1 / B7-H1, His Tag & Fc Tag, Avi Tag (Avitag)	AMS.PD1-H82F3-25ug	25ug
Human PD-L2 (CD273), Fc fusion, Biotin-labeled	AMS.71108	50 ug
Human TDO, His-tag	AMS.71195	50 ug
HVEM, Fc fusion, Biotin-labeled	AMS.71143	50 ug
Human IDO1, His-tag	AMS.71182	50 ug
Human IDO2, His-tag	AMS.71194	200ug
Human IL17 / IL17A Protein,Tag Free	AMS.ILA-H5118-25ug	25ug
IL-17RA, Fc fusion, Biotin-labeled	AMS.91013	5 ug
LAG3 (CD223), Fc fusion	AMS.71146	100ug
mTOR/Raptor/mLST8 Complex, FLAG-tag, His-tag	AMS.40300	10 ug
OX40 (CD134), Biotin-labeled, His-tag	AMS. 71310	50 ug
Human OX40 Ligand / TNFSF4 Protein, Fc Tag	AMS.OXL-H526x-100ug	100ug
SIRP-alpha (CD172g), Fc fusion, Biotin-labeled	AMS. 71236	50 ug
TIGIT, Fc fusion, Biotin-labeled	AMS. 71251	50 ug
Human TIM-3 / HAVCR2 (22-200) Protein, Fc Tag	AMS.TM3-H5258-100ug	100ug
TPH1, His-tag	AMS.71192	50 ug
TPH2, His-tag	AMS.71193	50 ug
TUT4, FLAG-tag, Biotin-Labeled	AMS.71258	25ug

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