Pembrolizumab

Targets (1) Biointeractions (1)

IDENTIFICATION

Name

Pembrolizumab

Accession Number

DB09037

Type

Biotech

Groups

Approved

Biologic Classification

Protein Based Therapies
Monoclonal antibody (mAb)

Description

Pembrolizumab is a humanized monoclonal antibody that blocks the interaction between PD-1 and its ligands, PD-L1 and PD-L2. It is used for the treatment of several types of cancer such as, Melanoma, Non-Small Cell Lung Cancer and Head and Neck Cancer.

Due to its success in clinical trials, pembrolizumab was approved early to allow quick patient access and was given breakthrough therapy and orphan drug designation. Pembrolizumab (as Keytruda) was approved by the U.S. Food and Drug Administration to treat advanced cases of the most common type of lung malignancy, non-small cell lung cancer on Oct. 2, 2015. Keytruda was additionally approved for the treatment of Classical Hodgkin Lymphoma (cHL) in March, 2017.

Protein structure

Protein chemical formula

$C_{6504}H_{10004}N_{1716}O_{2036}S_{46}$

Protein average weight

146286.2902 Da

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>Heavy Chain Sequence
QVQLVQSGVEVKKPGASVKVSCKASGYTFTNYYMYWVRQAPGQGLEWMGGINPSNGGTNF
NEKFKNRVTLTTDSSTTTAYMELKSLQFDDTAVYYCARRDYRFDMGFDYWGQGTTVTVSS
ASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSS
GLYSLSSVVTVPSSSLGTKTYTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSV
FLFPPKPKDTLMISRTPEVTCVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTY
RVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTISKAKGQPREPQVYTLPPSQEEMTK

NQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSRLTVDKSRWQEG
NVFSCSVMHEALHNHYTQKSLSLSLGK
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>Light Chain Sequence
EIVLTQSPATLSLSPGERATLSCRASKGVSTSGYSYLHWYQQKPGQAPRLLIYLASYLES
GVPARFSGSGSGTDFTLTISSLEPEDFAVYYCQHSRDLPLTFGGGTKVEIKRTVAAPSVF
IFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLS
STLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
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Synonyms

Lambrolizumab

External IDs

lambrolizumab / MK 3475 / MK-3475 / MK3475

Prescription Products

Search

NAME	DOSAGE	STRENGTH	ROUTE	LABELLER	MARKETING START	MARKETING END		
Keytruda	Powder, for solution	50 mg	Intravenous	Merck Ltd.	2015-06-01	Not Applicable		
Keytruda	Solution	25 mg	Intravenous	Merck Ltd.	2017-07-13	Not Applicable		
Keytruda	Injection, solution, concentrate	25 mg/ml	Intravenous	Merck Sharp & Dohme Limited	2015-07-17	Not Applicable		
Keytruda	Injection, powder, lyophilized, for solution	50 mg/2mL	Intravenous	Merck Sharp & Dohme Limited	2014-09-04	Not Applicable		
Keytruda	Injection, powder, for solution	50 mg	Intravenous	Merck Sharp & Dohme Limited	2015-07-17	Not Applicable		
Keytruda	Injection, solution	25 mg/mL	Intravenous	Merck Sharp & Dohme Limited	2015-01-15	Not Applicable		

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Categories

Amino Acids, Peptides, and Proteins

Antibodies

Antibodies, Monoclonal

Antineoplastic Agents

Blood Proteins

Globulins

Immunoglobulins

Immunoproteins

Programmed Death Receptor-1 Blocking Antibody

Proteins

Serum Globulins

UNII

DPT0O3T46P

CAS number

1374853-91-4

PHARMACOLOGY

Indication

Pembrolizumab is a programmed death receptor-1 (PD-1)-blocking antibody indicated for the treatment of: □ patients with unresectable or metastatic melanoma. □ patients with metastatic NSCLC whose tumors have high PD-L1 expression [(Tumor Proportion Score (TPS) ≥50%)] as determined by an FDA-approved test, with no EGFR or ALK genomic tumor aberrations, and no prior systemic chemotherapy treatment for metastatic NSCLC. □ patients with metastatic NSCLC whose tumors express PD-L1 (TPS ≥1%) as determined by an FDA-approved test, with disease progression on or after platinum-containing chemotherapy. Patients with EGFR or ALK genomic tumor aberrations should have disease progression on FDA-approved therapy for these aberrations prior to receiving KEYTRUDA. □ patients with recurrent or metastatic HNSCC with disease progression on or after platinum-containing chemotherapy. This indication is approved under accelerated approval based on tumor response rate and durability of response. Continued approval for this indication may be contingent upon verification and description of clinical benefit in the confirmatory trials.

Structured Indications ⓘ

Metastatic Melanoma

Unresectable Melanoma

Refractory, metastatic Non-small cell lung cancer

Pharmacodynamics

Based on dose/exposure efficacy and safety relationships, there are no clinically significant differences in efficacy and safety between pembrolizumab doses of 200 mg or 2 mg/kg every 3 weeks in patients with NSCLC. Pembrolizumab binds with high affinity (29 pM) to PD-1, antagonizing the interaction between PD-1 and its known ligands, PD-L1 and PD-L2, with a half maximal inhibitory concentration between 500 pM and 1 nM. Engagement of PD-1 on T cells with PDL1 or PD-L2 inhibits TCR-mediated T cell proliferation and cytokine production. Intracellularly, PD-1 activation inhibits CD28 signalling through the PI3K/AKT pathway, likely via the recruitment of the SHP-2 and SHP-1 phosphatases to the immune synapse, blocking the upregulation of pro-inflammatory mediators (e.g., IL-2 and IFNγ) and survival signals (e.g. Bcl-xl). The inhibitory role of

fetal tissue. By inhibiting this inhibitor in the treatment of cancer, pembrolizumab aims to shift the balance toward immune reactivity, enhancing tumor immunosurveillance and antitumor immune responses.

Mechanism of action

Pembrolizumab is an antibody drug that targets the cell surface receptor programmed cell death protein 1 (PD-1) found on T cells. By preventing the binding of its ligands (PD-L1 and PD-L2), pembrolizumab induces an antitumor immune response. Upregulation of PD-1 ligands is a mechanism for tumours to evade antitumor immune response; when PD-1 binds its ligand, the T cell receives an inhibitory signal leading to T cell anergy and blockade of anti tumour immune response. Instead of directly targeting tumor tissue to induce tumor cell death, pembrolizumab acts as a checkpoint inhibitor to stimulate immune responses to eliminate cancer cells.

A	Programmed cell death protein 1
	antagonist antibody
	Human

Absorption

Steady-state concentrations of pembrolizumab were reached by 19 weeks of repeated dosing with an every 3-week regimen and the systemic accumulation was 2.2-fold. The peak concentration (Cmax), trough concentration (Cmin), and area under the plasma concentration versus time curve at steady state (AUCss) of pembrolizumab increased dose proportionally in the dose range of 2 to 10 mg/kg every 3 weeks.

Volume of distribution

volume of distribution at steady state is 6.1 L

Protein binding

As an intravenously administered antibody, the drug is immediately and completely bioavailable and is not expected to bind to plasma proteins in a specific manner.

Metabolism

Pembrolizumab undergoes catabolism to small peptides and single amnio acids via general protein degradation routes and does not rely on metabolism for clearance.

Route of elimination

Not Available

Half life

23 days

Clearance

0.22 L/day

Toxicity

immune-mediated pneumonitis, colitis, hypophysitis, nephritis and renal failure, hyperthyroidism and hypothyroidism, and hepatitis. Other adverse events such as myasthenic syndrome, optic neuritis, uveitis, arthritis, pancreatitis, partial seizures, and rhabdomnyolysis were reported to occur in less than 1% of patients during clinical trials. Female patients are advised to use highly effective contraception during and for 4 months following treatment due to the risk of fetal harm.

Affected organisms

Humans and other mammals

Pathways

Not Available

Pharmacogenomic Effects/ADRs

Not Available

INTERACTIONS

Drug Interactions

Search

DRUG	INTERACTION	DRUG GROUP
Acetyldigitoxin	Acetyldigitoxin may decrease the cardiotoxic activities of Pembrolizumab.	Approved
Acetyldigoxin	Acetyldigoxin may decrease the cardiotoxic activities of Pembrolizumab.	Experimental
Ancestim	The risk or severity of cytotoxicity can be increased when Ancestim is combined with Pembrolizumab.	Approved, Investigational, Withdrawn
Anthrax immune globulin human	The therapeutic efficacy of Anthrax immune globulin human can be decreased when used in combination with Pembrolizumab.	Approved
Bacillus calmette-guerin substrain connaught live antigen	The therapeutic efficacy of Bacillus calmette-guerin substrain connaught live antigen can be decreased when used in combination with Pembrolizumab.	Approved, Investigational
Bacillus calmette-guerin substrain tice live antigen	The therapeutic efficacy of Bacillus calmette-guerin substrain tice live antigen can be decreased when used in combination with Pembrolizumab.	Approved
BCG vaccine	The therapeutic efficacy of BCG vaccine can be decreased when used in combination with Pembrolizumab.	Investigational
Belimumab	The risk or severity of adverse effects can be increased when Pembrolizumab is combined with Belimumab.	Approved
Bevacizumab	Bevacizumab may increase the cardiotoxic activities of Pembrolizumab.	Approved, Investigational
Cabazitaxel	The risk or severity of adverse effects can be increased when Cabazitaxel is combined with Pembrolizumab.	Approved
Clostridium tetani toxoid antigen (formaldehyde inactivated)	The therapeutic efficacy of Clostridium tetani toxoid antigen (formaldehyde inactivated) can be decreased when used in combination with Pembrolizumab.	Approved

Corynebacterium diphtheriae toxoid antigen (formaldehyde inactivated)	The therapeutic efficacy of Corynebacterium diphtheriae toxoid antigen (formaldehyde inactivated) can be decreased when used in combination with Pembrolizumab.	Approved
Cyclophosphamide	Cyclophosphamide may increase the cardiotoxic activities of Pembrolizumab.	Approved, Investigational
Cymarin	Cymarin may decrease the cardiotoxic activities of Pembrolizumab.	Experimental
Deslanoside	Deslanoside may decrease the cardiotoxic activities of Pembrolizumab.	Approved
Digitoxin	Digitoxin may decrease the cardiotoxic activities of Pembrolizumab.	Approved, Investigational
Digoxin	Digoxin may decrease the cardiotoxic activities of Pembrolizumab.	Approved
Digoxin Immune Fab (Ovine)	Digoxin Immune Fab (Ovine) may decrease the cardiotoxic activities of Pembrolizumab.	Approved
Docetaxel	The risk or severity of adverse effects can be increased when Docetaxel is combined with Pembrolizumab.	Approved, Investigational
G17DT	The therapeutic efficacy of G17DT can be decreased when used in combination with Pembrolizumab.	Investigational
GI-5005	The therapeutic efficacy of GI-5005 can be decreased when used in combination with Pembrolizumab.	Investigational
Gitoformate	Gitoformate may decrease the cardiotoxic activities of Pembrolizumab.	Experimental
Hepatitis A Vaccine	The therapeutic efficacy of Hepatitis A Vaccine can be decreased when used in combination with Pembrolizumab.	Approved
Hepatitis B Vaccine (Recombinant)	The therapeutic efficacy of Hepatitis B Vaccine (Recombinant) can be decreased when used in combination with Pembrolizumab.	Approved, Withdrawn
Human rabies virus immune globulin	The therapeutic efficacy of Human rabies virus immune globulin can be decreased when used in combination with Pembrolizumab.	Approved
INGN 201	The therapeutic efficacy of INGN 201 can be decreased when used in combination with Pembrolizumab.	Investigational
INGN 225	The therapeutic efficacy of INGN 225 can be decreased when used in combination with Pembrolizumab.	Investigational
Japanese encephalitis virus strain sa 14-14-2 antigen (formaldehyde inactivated)	The therapeutic efficacy of Japanese encephalitis virus strain sa 14-14-2 antigen (formaldehyde inactivated) can be decreased when used in combination with Pembrolizumab.	Approved
Lanatoside C	Lanatoside C may decrease the cardiotoxic activities of Pembrolizumab.	Experimental
Metildigoxin	Metildigoxin may decrease the cardiotoxic activities of Pembrolizumab.	Experimental
Oleandrin	Oleandrin may decrease the cardiotoxic activities of Pembrolizumab.	Experimental, Investigational
Ouabain	Ouabain may decrease the cardiotoxic activities of Pembrolizumab.	Approved
Paclitaxel	The risk or severity of adverse effects can be increased when Paclitaxel is combined with Pembrolizumab.	Approved, Vet Approved
Peruvoside	Peruvoside may decrease the cardiotoxic activities of Pembrolizumab.	Experimental
Proscillaridin	Proscillaridin may decrease the cardiotoxic activities of Pembrolizumab.	Experimental
Rabies virus inactivated antigen, A	The therapeutic efficacy of Rabies virus inactivated antigen, A can be decreased when used in combination with Pembrolizumab.	Approved, Investigational
Rindopepimut	The therapeutic efficacy of Rindopepimut can be decreased when used in combination with Pembrolizumab.	Investigational
Rotavirus Vaccine	The therapeutic efficacy of Rotavirus Vaccine can be decreased when used in combination with Pembrolizumab.	Approved
Rubella virus vaccine	The therapeutic efficacy of Rubella virus vaccine can be decreased when used in combination with Pembrolizumab.	Approved, Investigational

Salmonella typhi ty2 vi polysaccharide antigen	The therapeutic efficacy of Salmonella typhi ty2 vi polysaccharide antigen can be decreased when used in combination with Pembrolizumab.	Approved
Salmonella typhi ty21a live antigen	The therapeutic efficacy of Salmonella typhi ty21a live antigen can be decreased when used in combination with Pembrolizumab.	Approved
SRP 299	The therapeutic efficacy of SRP 299 can be decreased when used in combination with Pembrolizumab.	Investigational
Tecemotide	The therapeutic efficacy of Tecemotide can be decreased when used in combination with Pembrolizumab.	Investigational
TG4010	The therapeutic efficacy of TG4010 can be decreased when used in combination with Pembrolizumab.	Investigational
Trastuzumab	Trastuzumab may increase the cardiotoxic activities of Pembrolizumab.	Approved, Investigational
Varicella Zoster Vaccine (Live/Attenuated)	The therapeutic efficacy of Varicella Zoster Vaccine (Live/Attenuated) can be decreased when used in combination with Pembrolizumab.	Approved
Yellow fever vaccine	The therapeutic efficacy of Yellow fever vaccine can be decreased when used in combination with Pembrolizumab.	Approved, Investigational

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Food Interactions

Not Available

REFERENCES

General References

1. Robert C, Ribas A, Wolchok JD, Hodi FS, Hamid O, Kefford R, Weber JS, Joshua AM, Hwu WJ, Gangadhar TC, Patnaik A, Dronca R, Zarour H, Joseph RW, Boasberg P, Chmielowski B, Mateus C, Postow MA, Gergich K, Elassaiss-Schaap J, Li XN, Iannone R, Ebbinghaus SW, Kang SP, Daud A: Anti-programmed-death-receptor-1 treatment with pembrolizumab in ipilimumab-refractory advanced melanoma: a randomised dose-comparison cohort of a phase 1 trial. Lancet. 2014 Sep 20;384(9948):1109-17. doi: 10.1016/S0140-6736(14)60958-2. Epub 2014 Jul 15. [PubMed:25034862]
2. Hamid O, Robert C, Daud A, Hodi FS, Hwu WJ, Kefford R, Wolchok JD, Hersey P, Joseph RW, Weber JS, Dronca R, Gangadhar TC, Patnaik A, Zarour H, Joshua AM, Gergich K, Elassaiss-Schaap J, Algazi A, Mateus C, Boasberg P, Tumeh PC, Chmielowski B, Ebbinghaus SW, Li XN, Kang SP, Ribas A: Safety and tumor responses with lambrolizumab (anti-PD-1) in melanoma. N Engl J Med. 2013 Jul 11;369(2):134-44. doi: 10.1056/NEJMoa1305133. Epub 2013 Jun 2. [PubMed:23724846]
3. Poole RM: Pembrolizumab: first global approval. Drugs. 2014 Oct;74(16):1973-81. doi: 10.1007/s40265-014-0314-5. [PubMed:25331768]
4. Longoria TC, Tewari KS: Evaluation of the pharmacokinetics and metabolism of pembrolizumab in the treatment of melanoma. Expert Opin Drug Metab Toxicol. 2016 Oct;12(10):1247-53. doi: 10.1080/17425255.2016.1216976. Epub 2016 Aug 16. [PubMed:27485741]
5. FDA label [Link]

External Links

KEGG Drug

D10574

PubChem Substance

347910395

ChEMBL

CHEMBL2137343

RxList Drug Page

Drugs.com

Drugs.com Drug Page

Wikipedia

Pembrolizumab

ATC Codes

L01XC18 — Pembrolizumab

- L01XC — Monoclonal antibodies
- L01X — OTHER ANTINEOPLASTIC AGENTS
- L01 — ANTINEOPLASTIC AGENTS
- L — ANTINEOPLASTIC AND IMMUNOMODULATING AGENTS

AHFS Codes

10:00.00 — Antineoplastic Agents

FDA label

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MSDS

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CLINICAL TRIALS

Clinical Trials

Search

PHASE	STATUS	PURPOSE	CONDITIONS	COUNT
0	Active Not Recruiting	Treatment	Smoldering Multiple Myeloma (SMM)	1
0	Not Yet Recruiting	Basic Science	Cancer, Breast / Hormone Receptor Negative Neoplasm / Triple Negative Breast Cancer (TNBC)	1
0	Not Yet Recruiting	Treatment	Malignant Neoplasm of Pancreas	1
0	Not Yet Recruiting	Treatment	Transitional Cell Carcinoma	1
0	Recruiting	Basic Science	Lung Cancer Non-Small Cell Cancer (NSCLC)	1
0	Recruiting	Treatment	Advanced Gastroesophageal Adenocarcinoma / Diseases of Oesophagus Stomach and Duodenum	1
0	Recruiting	Treatment	B-cell Non-Hodgkin's Lymphomas / Classical Hodgkin Lymphoma / Leukemia Acute Myeloid Leukemia (AML) / Myelodysplastic Syndromes	1
0	Recruiting	Treatment	Cancer, Breast	1
0	Recruiting	Treatment	Carcinoma, Intraductal, Noninfiltrating	1
0	Recruiting	Treatment	Fallopian Tube Cancer / Malignant Peritoneal Neoplasm / Neoplasms, Gynecologic / Ovarian Epithelial Cancer / Uterine Endometrial Cancer	1

0	Recruiting	Treatment	Hepatocellular,Carcinoma	1
0	Recruiting	Treatment	Malignant Melanoma, Metastatic	1
0	Recruiting	Treatment	Metastatic Melanoma / Stage IIIB Cutaneous Melanoma AJCC v7 / Stage IIIC Cutaneous Melanoma AJCC v7 / Stage IV Cutaneous Melanoma AJCC v6 and v7	1
0	Recruiting	Treatment	Metastatic Non-Small Cell Lung Cancer	1
0	Recruiting	Treatment	Refractory Acute Myeloid Leukemia	1
1	Active Not Recruiting	Treatment	Adenocarcinoma of the Pancreas	1
1	Active Not Recruiting	Treatment	Adenocarcinomas of the Gastroesophageal Junction / Biliary Tract Cancer / Gastric Adenocarcinoma / Lung Cancer Non-Small Cell Cancer (NSCLC) / Transitional Cell Carcinoma	1
1	Active Not Recruiting	Treatment	Adult Solid Neoplasm / Bladder Carcinoma / Carcinoma, Pancreatic / Colon Carcinoma / Estrogen Receptor Negative / Head and Neck Squamous Cell Carcinoma (HNSCC) / Hepatocellular,Carcinoma / HER2/Neu Negative / Melanoma / Non-Small Cell Lung Carcinoma (NSCLC) / Progesterone Receptor Negative / Rectal Carcinoma / Renal Cell Adenocarcinoma / Soft Tissue Sarcoma (STS) / TP53 Gene Mutation / Triple-Negative Breast Carcinoma / Unresectable Solid Neoplasm	1
1	Active Not Recruiting	Treatment	Advanced GI Cancer	1
1	Active Not Recruiting	Treatment	Advanced Solid Tumors	1
1	Active Not Recruiting	Treatment	Cancer of the Ovary / Cancer, Breast / Carcinoma, Colorectal / Carcinoma, Pancreatic / Melanoma / Non-Small Cell Lung Carcinoma (NSCLC) / Prostate Cancer / Renal Cell Adenocarcinoma / Tumors, Solid	1
1	Active Not Recruiting	Treatment	Cancers / Tumors, Solid	1
1	Active Not Recruiting	Treatment	Follicular Lymphoma (FL) / Lymphoma, Hodgkins / Lymphoma, Large B-Cell, Diffuse (DLBCL) / Multiple Myeloma (MM) / Myelodysplastic Syndrome / Non-Hodgkin's Lymphoma (NHL) / Primary Mediastinal B-Cell Lymphoma	1
1	Active Not Recruiting	Treatment	Locally Advanced or Metastatic Solid Tumors	1
1	Active Not Recruiting	Treatment	Lung Cancer Non-Small Cell Cancer (NSCLC)	2
1	Active Not Recruiting	Treatment	Lymphoma, Hodgkins	1
1	Active Not Recruiting	Treatment	Malignant Gliomas	1
1	Active Not Recruiting	Treatment	Melanoma	2
1	Active Not Recruiting	Treatment	Neuroblastomas	1
1	Active Not Recruiting	Treatment	Renal Cell Adenocarcinoma	1
1	Active Not Recruiting	Treatment	Solid Tumor Cancers	1
1	Active Not Recruiting	Treatment	Stage IV Non-Small Cell Lung Cancer	1
1	Active Not Recruiting	Treatment	Triple Negative Breast Neoplasms	1

1	Active Not Recruiting	Treatment	Tumors, Solid	2
1	Completed	Treatment	Advanced Solid Tumors	1
1	Completed	Treatment	Bone Neoplasms / Neoplasms, Breast	1
1	Completed	Treatment	Malignant Melanoma / Melanoma / Melanoma Recurrent	1
1	Completed	Treatment	Melanoma	1
1	Not Yet Recruiting	Not Available	Squamous Cell Carcinoma (SCC) / Squamous Cell Carcinoma of the Head and Neck (SCCHN)	1
1	Not Yet Recruiting	Health Services Research	Castration-Resistant Prostatic Cancer / Lung Cancer Non-Small Cell Cancer (NSCLC)	1
1	Not Yet Recruiting	Other	CTCL / PTCL	1
1	Not Yet Recruiting	Treatment	Bladder transitional cell carcinoma / Classical Hodgkin Lymphoma / DNA Repair-Deficiency Disorders / Head and Neck Squamous Cell Carcinoma (HNSCC) / Lung Cancer Non-Small Cell Cancer (NSCLC) / Malignant Melanoma	1
1	Not Yet Recruiting	Treatment	Breast Adenocarcinoma / Recurrent Breast Carcinoma / Recurrent Hodgkin Lymphoma / Recurrent Mycosis Fungoides / Recurrent Non-Hodgkin Lymphoma / Recurrent Primary Cutaneous T-Cell Non-Hodgkin Lymphoma / Refractory Hodgkin Lymphoma / Refractory Mycosis Fungoides / Refractory Nodal Marginal Zone Lymphoma / Refractory Non-Hodgkin's lymphoma / Refractory Primary Cutaneous T-Cell Non-Hodgkin Lymphoma / Stage IV Breast Cancer AJCC v6 and v7	1
1	Not Yet Recruiting	Treatment	Clear Cell Renal Cell Carcinoma / Stage III Renal Cell Cancer / Stage IV Renal Cell Cancer	1
1	Not Yet Recruiting	Treatment	GBM / Glioblastomas / Neoplasms, Brain	1
1	Not Yet Recruiting	Treatment	Gastrointestinal Cancer Metastatic	1
1	Not Yet Recruiting	Treatment	Hepatocellular,Carcinoma	1
1	Not Yet Recruiting	Treatment	ISS Stage I Plasma Cell Myeloma / ISS Stage II Plasma Cell Myeloma / ISS Stage III Plasma Cell Myeloma / Recurrent Plasma Cell Myeloma / Refractory Plasma Cell Myeloma	1
1	Not Yet Recruiting	Treatment	Lung Cancer Non-Small Cell Cancer (NSCLC)	4
1	Not Yet Recruiting	Treatment	Lung Cancer Non-Small Cell Cancer (NSCLC) / Lung Cancers / Nonsquamous Nonsmall Cell Neoplasm of Lung	1
1	Not Yet Recruiting	Treatment	Lung Cancer Non-Small Cell Cancer (NSCLC) / NSCLC Stage IV / NSCLC, Stage IIIB	1
1	Not Yet Recruiting	Treatment	Metastatic Colorectal Cancers / MSS	1
1	Not Yet Recruiting	Treatment	Malignant Neoplasm of Breast / Malignant Neoplasms of Digestive Organs / Malignant Neoplasms of Eye Brain and Other Parts of Central Nervous System / Malignant Neoplasms of Female Genital Organs / Malignant Neoplasms of Ill-defined Secondary and Unspecified Sites / Malignant Neoplasms of Independent (Primary) Multiple Sites / Malignant Neoplasms of Lip Oral Cavity and Pharynx / Malignant Neoplasms of Male Genital Organs / Malignant Neoplasms of Mesothelial and Soft Tissue / Malignant Neoplasms of Respiratory and Intrathoracic Organs / Malignant Neoplasms of Thyroid and Other Endocrine Glands / Malignant Neoplasms of Urinary Tract	1

1	Not Yet Recruiting	Treatment	Melanoma Stage Iii / Melanoma Stage Iv	1
1	Not Yet Recruiting	Treatment	Metastatic Colorectal Cancers	1
1	Not Yet Recruiting	Treatment	Metastatic Non-Small Cell Lung Cancer	1
1	Not Yet Recruiting	Treatment	Pharmacokinetics / Tumors, Solid	1
1	Not Yet Recruiting	Treatment	Relapsed or Refractory Diffuse Large B Cell Lymphoma (DLBCL)	1
1	Recruiting	Not Available	Invasive Bladder Cancer	1
1	Recruiting	Not Available	Thoracic Tumours	1
1	Recruiting	Basic Science	Soft Tissue Sarcoma Adult	1
1	Recruiting	Other	Human Immunodeficiency Virus (HIV) Infections	1
1	Recruiting	Treatment	AIDS Related Non-Hodgkin Lymphoma / Classical Hodgkin Lymphoma / Human Immunodeficiency Virus (HIV) Infections / Kaposi s Sarcoma (KS) / Locally Advanced Malignant Neoplasm / Metastatic Malignant Neoplasm / Recurrent Hepatocellular Carcinoma / Recurrent Hodgkin Lymphoma / Recurrent Kaposi's Sarcoma / Recurrent Malignant Neoplasm / Recurrent Melanoma / Recurrent Melanoma of the Skin / Recurrent Non-Hodgkin Lymphoma / Recurrent Non-Small Cell Lung Carcinoma / Refractory Hodgkin Lymphoma / Refractory Malignant Neoplasm / Solid Neoplasms / Stage IIIA Cutaneous Melanoma AJCC v7 / Stage IIIA Hepatocellular Carcinoma / Stage IIIA Hepatocellular Carcinoma AJCC v7 / Stage IIIA Non-Small Cell Lung Cancer / Stage IIIA Non-Small Cell Lung Cancer AJCC v7 / Stage IIIA Skin Melanoma / Stage IIIB Cutaneous Melanoma AJCC v7 / Stage IIIB Hepatocellular Carcinoma / Stage IIIB Hepatocellular Carcinoma AJCC v7 / Stage IIIb Non-small Cell Lung Cancer / Stage IIIB Non-Small Cell Lung Cancer AJCC v7 / Stage IIIB Skin Melanoma / Stage IIIC Cutaneous Melanoma AJCC v7 / Stage IIIC Hepatocellular Carcinoma / Stage IIIC Hepatocellular Carcinoma AJCC v7 / Stage IIIC Skin Melanoma / Stage IV Cutaneous Melanoma AJCC v6 and v7 / Stage IV Non-Small Cell Lung Cancer / Stage IV Non-Small Cell Lung Cancer AJCC v7 / Stage IV Skin Melanoma / Stage IVA Hepatocellular Carcinoma / Stage IVA Hepatocellular Carcinoma AJCC v7 / Stage IVB Hepatocellular Carcinoma / Stage IVB Hepatocellular Carcinoma AJCC v7	1
1	Recruiting	Treatment	ALK-positive Advanced NSCLC	1
1	Recruiting	Treatment	Acute Lymphoblastic Leukaemias (ALL) / Leukemia Acute Myeloid Leukemia (AML) / Myelodysplastic Syndromes	1

1	Recruiting	Treatment	Adenocarcinomas of the Gastroesophageal Junction / Colorectal Adenocarcinoma / Non-Resectable Cholangiocarcinoma / Non-Resectable Hepatocellular Carcinoma / Pancreatic Adenocarcinoma Metastatic / Recurrent Cholangiocarcinoma / Recurrent Colorectal Carcinoma / Recurrent Gastric Carcinoma / Recurrent Hepatocellular Carcinoma / Recurrent Pancreatic Carcinoma / Recurrent Small Intestinal Carcinoma / Small Intestinal Adenocarcinoma / Stage III Colorectal Cancer / Stage III Gastric Cancer / Stage III Hepatocellular Carcinoma / Stage III Pancreatic Cancer / Stage III Small Intestinal Cancer / Stage IIIA Colorectal Cancer / Stage IIIA Gastric Cancer / Stage IIIA Hepatocellular Carcinoma / Stage IIIA Small Intestinal Cancer / Stage IIIB Colorectal Cancer / Stage IIIB Gastric Cancer / Stage IIIB Hepatocellular Carcinoma / Stage IIIB Small Intestinal Cancer / Stage IIIC Gastric Cancer / Stage IV Colorectal Cancer / Stage IV Gastric Cancer / Stage IV Hepatocellular Carcinoma / Stage IV Pancreatic Cancer / Stage IV Small Intestinal Cancer / Stage IVA Colorectal Cancer / Stage IVA Hepatocellular Carcinoma / Stage IVA Pancreatic Cancer / Stage IVB Colorectal Cancer / Stage IVB Hepatocellular Carcinoma / Stage IVB Pancreatic Cancer / Unresectable Pancreatic Carcinoma / Unresectable Small Intestinal Carcinoma	1
1	Recruiting	Treatment	Adenocarcinomas of the Gastroesophageal Junction / Gastric Adenocarcinoma / Gastrooesophageal Cancer / Neoplasms, Esophageal / Squamous Cell Carcinoma (SCC)	1
1	Recruiting	Treatment	Adult Solid Neoplasm / Metastatic Melanoma / Metastatic Renal Cell Cancer / Recurrent Colorectal Carcinoma / Recurrent Melanoma / Recurrent Ovarian Carcinoma / Renal Cell Carcinoma Recurrent / Stage IV Ovarian Cancer / Stage IV Ovarian Cancer AJCC v6 and v7 / Stage IVA Colorectal Cancer / Stage IVA Colorectal Cancer AJCC v7 / Stage IVB Colorectal Cancer / Stage IVB Colorectal Cancer AJCC v7	1
1	Recruiting	Treatment	Advanced Cancers	1
1	Recruiting	Treatment	Advanced Melanoma	1
1	Recruiting	Treatment	Advanced Solid Cancers	1
1	Recruiting	Treatment	Advanced Solid Tumors	3
1	Recruiting	Treatment	Advanced Solid Tumors / Cancer, Breast / CRC (Colorectal Cancer) / Endometrial Cancers / Head and Neck Squamous Cell Carcinoma (HNSCC) / Lung Cancer Non-Small Cell Cancer (NSCLC) / Lung Cancer Small Cell Lung Cancer (SCLC) / Melanoma / Microsatellite Unstable (MSI) Colorectal Cancer / MMR-deficient Tumors / Pancreatic Ductal Adenocarcinoma / RCC (Renal Cell Carinoma) / Renal Cell Adenocarcinoma / SCCHN (Head and Neck Squamous Cell Carcinoma) / Transitional Cell Carcinoma of the Genitourinary Tract / Triple Negative Breast Cancer (TNBC) / UC (Urothelial Cancer)	1
1	Recruiting	Treatment	Advanced Solid Tumors / Malignant Neoplasm of Pancreas / Tumors, Solid	1
1	Recruiting	Treatment	Advanced or Unresectable Melanoma Progressing After PD1 Blockade	1
1	Recruiting	Treatment	Anal Carcinoma / Carcinoma in Situ / Cervical Cancers / Cervical Intraepithelial Neoplasia (CIN) / Oropharyngeal Cancers / Papillomavirus Infections / Penile Cancer / Vaginal Cancers / Vulvar Diseases / Vulvar Neoplasms	1

1	Recruiting	Treatment	B-Cell Lymphoma, Unclassifiable, With Features Intermediate Between Diffuse Large B-Cell Lymphoma and Classical Hodgkin Lymphoma / Grade 1 Follicular Lymphoma / Grade 2 Follicular Lymphoma / Grade 3a Follicular Lymphoma / Mediastinal Lymphoma / Recurrent B-Cell Non-Hodgkin Lymphoma / Recurrent Burkitt Lymphoma / Recurrent Diffuse Large B-Cell Lymphoma / Recurrent Follicular Lymphoma / Recurrent Lymphoplasmacytic Lymphoma / Recurrent Mantle Cell Lymphoma / Recurrent Marginal Zone Lymphoma / Recurrent Waldenstrom Macroglobulinemia / Refractory B-Cell Non-Hodgkin Lymphoma / Refractory Burkitt Lymphoma / Refractory Diffuse Large B-Cell Lymphoma / Refractory Follicular Lymphoma / Refractory Lymphoplasmacytic Lymphoma / Refractory Mantle Cell Lymphoma	1
1	Recruiting	Treatment	B-cell Non Hodgkin's Lymphoma / CLL	1
1	Recruiting	Treatment	Bladder Cancers	1
1	Recruiting	Treatment	Bladder Cancers / Castrate-resistant Prostate Cancer (CRPC) / Lung Cancer Non-Small Cell Cancer (NSCLC) / Melanoma	1
1	Recruiting	Treatment	Breast Carcinoma Metastatic in the Bone / Estrogen Receptor Negative / HER2/Neu Negative / Progesterone Receptor Negative / Recurrent Breast Carcinoma / Stage IV Breast Cancer / Triple-Negative Breast Carcinoma	1
1	Recruiting	Treatment	Breast Diseases / Chronic Lung Diseases / Digestive System Neoplasms / Endocrine Gland Neoplasms / Lung Cancer Non-Small Cell Cancer (NSCLC) / Neoplasm, Bronchial / Neoplasms / Neoplasms by Histologic Type / Neoplasms, Glandular and Epithelial / Neoplasms, Lung / Renal Neoplasms / Respiratory Tract Neoplasms / Thoracic Neoplasms / Tumors, Solid	1
1	Recruiting	Treatment	CDKN2A-p16 Negative / Stage III Hypopharyngeal Squamous Cell Carcinoma / Stage III Hypopharyngeal Squamous Cell Carcinoma AJCC v7 / Stage III Laryngeal Squamous Cell Carcinoma / Stage III Laryngeal Squamous Cell Carcinoma AJCC v6 and v7 / Stage III Oral Cavity Squamous Cell Carcinoma / Stage III Oral Cavity Squamous Cell Carcinoma AJCC v6 and v7 / Stage III Oropharyngeal Squamous Cell Carcinoma / Stage III Oropharyngeal Squamous Cell Carcinoma AJCC v7 / Stage IV Hypopharyngeal Squamous Cell Carcinoma / Stage IV Hypopharyngeal Squamous Cell Carcinoma AJCC v7 / Stage IV Laryngeal Squamous Cell Carcinoma / Stage IV Laryngeal Squamous Cell Carcinoma AJCC v7 / Stage IV Oral Cavity Squamous Cell Carcinoma / Stage IV Oral Cavity Squamous Cell Carcinoma AJCC v6 and v7 / Stage IV Oropharyngeal Squamous Cell Carcinoma / Stage IV Oropharyngeal Squamous Cell Carcinoma AJCC v7 / Stage IVA Hypopharyngeal Squamous Cell Carcinoma / Stage IVA Hypopharyngeal Squamous Cell Carcinoma AJCC v7 / Stage IVA Laryngeal Squamous Cell Carcinoma / Stage IVA Laryngeal Squamous Cell Carcinoma AJCC v7 / Stage IVA Oral Cavity Squamous Cell Carcinoma / Stage IVA Oral Cavity Squamous Cell Carcinoma AJCC v6 and v7 / Stage IVA Oropharyngeal Squamous Cell Carcinoma / Stage IVA Oropharyngeal Squamous Cell Carcinoma AJCC v7 / Stage IVB Hypopharyngeal Squamous Cell Carcinoma / Stage IVB Hypopharyngeal Squamous Cell Carcinoma AJCC v7 / Stage IVB Laryngeal Squamous Cell Carcinoma / Stage IVB Laryngeal Squamous Cell Carcinoma AJCC v7 / Stage IVB Oral Cavity Squamous Cell Carcinoma / Stage IVB Oral Cavity Squamous Cell Carcinoma AJCC v6 and v7 / Stage IVB Oropharyngeal Squamous Cell Carcinoma / Stage IVB Oropharyngeal Squamous Cell Carcinoma AJCC v7	1
1	Recruiting	Treatment	Cancer of the Esophagus / Esophageal Cancers / Neoplasms, Esophageal	1
1	Recruiting	Treatment	Cancer of the Ovary / Clear Cell Renal Cell Carcinoma / Head and Neck Carcinoma / Lung Cancer Non-Small Cell Cancer (NSCLC) / Malignant Neoplasm of Colon / Malignant Neoplasm of Pancreas / Melanoma / Mesothelioma / Prostate Cancer / Soft Tissue Sarcoma (STS) / Thyroid Cancers / Triple Negative Breast Cancer (TNBC) / Urethelial Carcinoma	1
1	Recruiting	Treatment	Cancer, Advanced	1

1	Recruiting	Treatment	Cancer, Advanced / Metastatic Cancers / NonHodgkin Lymphoma / Tumors, Solid	1
1	Recruiting	Treatment	Cancer, Breast	2
1	Recruiting	Treatment	Cancer, Breast / Cancers / Head and Neck Carcinoma / Malignant Lymphomas / Melanoma / Triple-Negative Breast Cancer (TNBC)	1
1	Recruiting	Treatment	Cancer, Breast / Lung Cancer Non-Small Cell Cancer (NSCLC)	1
1	Recruiting	Treatment	Cancer, Breast / Triple Negative Breast Cancer (TNBC)	1
1	Recruiting	Treatment	Cancers	2
1	Recruiting	Treatment	Cancers / Carcinoma NOS / Carcinoma, Non-Small Cell / Follicular Lymphoma (FL) / Hodgkins Disease (HD) / Lung Cancer Non-Small Cell Cancer (NSCLC) / Lymphoma, B-Cell / Lymphoma, Large B-Cell, Diffuse (DLBCL) / Malignancies, Hematologic / Malignant Lymphomas / Melanoma / Metastatic Non-Small Cell Lung Cancer / Neoplasms / Neoplasms Metastasis / Neoplasms, Head and Neck / Neoplasms, Squamous Cell / Non-Hodgkin's Lymphoma (NHL) / Squamous Cell Cancer / Squamous Cell Carcinoma (SCC) / Squamous Cell Carcinoma of the Head and Neck (SCCHN) / Squamous Cell Neoplasm	1
1	Recruiting	Treatment	Colorectal Adenocarcinoma / Colorectal Adeonocarcinoma / Colorectal Cancers / Metastatic Carcinoma in the Liver / Stage IVA Colorectal Cancer / Stage IVB Colorectal Cancer	1
1	Recruiting	Treatment	Colorectal Cancers	1
1	Recruiting	Treatment	Colorectal Cancers / Malignant Neoplasm of Pancreas	1
1	Recruiting	Treatment	Colorectal Cancers / Neoplasms	1
1	Recruiting	Treatment	Composite Lymphoma / Grade 3b Follicular Lymphoma / Stage I Diffuse Large B-Cell Lymphoma / Stage I Follicular Lymphoma / Stage II Diffuse Large B-Cell Lymphoma / Stage II Follicular Lymphoma / Stage III Diffuse Large B-Cell Lymphoma / Stage III Follicular Lymphoma / Stage IV Diffuse Large B-Cell Lymphoma / Stage IV Follicular Lymphoma	1
1	Recruiting	Treatment	Constitutional Mismatch Repair Deficiency Syndrome / Diffuse Intrinsic Pontine Glioma (DIPG) / Lynch Syndrome / Malignant Gliomas / Mismatch Repair Gene Inactivation / Recurrent Brain Neoplasm / Recurrent Childhood Brain Neoplasm / Recurrent Diffuse Intrinsic Pontine Glioma / Refractory Brain Neoplasm / Refractory Diffuse Intrinsic Pontine Glioma	1
1	Recruiting	Treatment	Endometrial Cancers / Endometrial Carcinoma / Neoplasms, Endometrial	1

Showing 1 to 100 of 574 entries

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PHARMACOECONOMICS

Manufacturers

Not Available

Packagers

Not Available

Dosage forms

Search

FORM	ROUTE	STRENGTH

Injection, solution	Intravenous	25 mg/mL
Injection, solution, concentrate	Intravenous	25 mg/ml
Powder, for solution	Intravenous	50 mg
Solution	Intravenous	25 mg

Showing 1 to 6 of 6 entries

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Prices

Not Available

Patents

Search

PATENT NUMBER	PEDIATRIC EXTENSION	APPROVED	EXPIRES (ESTIMATED)	
US2012135408	No	2012-03-29	2032-03-29	

Showing 1 to 1 of 1 entries

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PROPERTIES

State

Solid

Experimental Properties

Not Available

TAXONOMY

Description

Not Available

Kingdom

Organic Compounds

Super Class

Organic Acids

Class

Carboxylic Acids and Derivatives

Sub Class

Amino Acids, Peptides, and Analogues

Peptides

Alternative Parents

Not Available

Substituents

Not Available

Molecular Framework

Not Available

External Descriptors

Not Available

TARGETS

1. Programmed cell death protein 1

Kind

Protein

Organism

Human

Pharmacological action

Yes

Actions

Antagonist Antibody

General Function

Signal transducer activity

Specific Function

Inhibitory cell surface receptor involved in the regulation of T-cell function during immunity and tolerance. Upon ligand binding, inhibits T-cell effector functions in an antigen-specific manner. ...

Gene Name

PDCD1

Uniprot ID

Q15116

Uniprot Name

Programmed cell death protein 1

Molecular Weight

31646.635 Da

References

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