
















Table 1

Anticancer Therapeutics Approved by the FDA between August 1, 2016, and July 31, 2017

Angiogenesis Inhibitors			
Approved Indication	Generic Name	Trade Name	Formulation
Certain type of liver cancer [†]	regorafenib	Stivarga	
Cell Signaling Inhibitors			
Approved Indication	Generic Name	Trade Name	Formulation
Certain type of lung cancer	brigatinib	Alunbrig	
Certain type of lymphoma [†]	ibrutinib	Imbruvica	
Certain types of leukemia	midostaurin [*]	Rydapt	
Soft tissue sarcoma	olatumab	Lartruvo	
Certain type of breast cancer	ribociclib	Kisqali	
Certain type of lung cancer [†]	dabrafenib and trametinib [*]	Tafinlar and Mekinist	
Certain type of breast cancer	neratinib	Nerlynx	
DNA-repair Inhibitors			
Approved Indication	Generic Name	Trade Name	Formulation
Certain types of ovarian, fallopian tube, and primary peritoneal cancer	niraparib	Zejula	
Certain type of ovarian cancer	rucaparib [*]	Rubraca	
Immunotherapeutics			
Approved Indication	Generic Name	Trade Name	Formulation
Certain type of lung cancer [†]	atezolizumab	Tecentriq	
Certain types of bladder cancer [†] and skin cancer	avelumab	Bavencio	
Certain type of bladder cancer	durvalumab	Imfinzi	
Certain types of head and neck cancer [†] and bladder cancer [†]	nivolumab	Opdivo	
Certain types of head and neck cancer [†] , lymphoma [†] , bladder cancer [†] , and solid tumors that are MSI-H or dMMR [§]	pembrolizumab	Keytruda	

[†]new use for 2016-2017
^{*} requires a companion diagnostic

Where multiple trade names are used, only the most common have been listed

[†] Microsatellite Instability-High
[§] Mismatch repair-deficient

Table 2

Estimated Incidence and Mortality for Select Cancers*

	ESTIMATED 2017 INCIDENCE			ESTIMATED 2017 DEATHS		
	Total	Male	Female	Total	Male	Female
All Sites	1,688,780	836,150	852,630	600,920	318,420	282,500
Head and Neck Region						
Brain and other nervous system	23,800	13,450	10,350	16,700	9,620	7,080
Eye and orbit	3,130	1,800	1,330	330	180	150
Tongue	16,400	11,880	4,520	2,400	1,670	730
Mouth	13,210	7,800	5,410	2,580	1,680	900
Pharynx	17,000	13,780	3,220	3,050	2,340	710
Other oral cavity	3,060	2,260	800	1,670	1,310	360
Larynx	13,360	10,570	2,790	3,660	2,940	720
Lung and bronchus	222,500	116,990	105,510	155,870	84,590	71,280
Breast	255,180	2,470	252,710	41,070	460	40,610
Gastrointestinal System						
Esophagus	16,940	13,360	3,580	15,690	12,720	2,970
Stomach	28,000	17,750	10,250	10,960	6,720	4,240
Liver and intrahepatic bile duct	40,710	29,200	11,510	28,920	19,610	9,310
Gallbladder and other biliary	11,740	5,320	6,420	3,830	1,630	2,200
Pancreas	53,670	27,970	25,700	43,090	22,300	20,790
Small intestine	10,190	5,380	4,810	1,390	770	620
Colon and rectum†	95,520	47,700	47,820	50,260	27,150	23,110
Anus, anal canal, and anorectum	8,200	2,950	5,250	1,100	450	650
Urogenital System						
Kidney and renal pelvis	63,990	40,610	23,380	14,400	9,470	4,930
Ovary	22,440		22,440	14,080		14,080
Uterine corpus	61,380		61,380	10,920		10,920
Uterine cervix	12,820		12,820	4,210		4,210
Urinary bladder	79,030	60,490	18,540	16,870	12,240	4,630
Prostate	161,360	161,360		26,730	26,730	
Testis	8,850	8,850		410	410	
Skin						
Skin (excluding basal and squamous)	95,360	57,140	38,220	13,590	9,250	4,340
Melanoma-skin	87,110	52,170	34,940	9,730	6,380	3,350
Hematological System						
Leukemia	62,130	36,290	25,840	24,500	14,300	10,200
Acute lymphocytic leukemia	5,970	3,350	2,620	1,440	800	640
Chronic lymphocytic leukemia	20,110	12,310	7,800	4,660	2,880	1,780
Acute myeloid leukemia	21,380	11,960	9,420	10,590	6,110	4,480
Chronic myeloid leukemia	8,950	5,230	3,720	1,080	610	470
Lymphoma	80,500	44,730	35,770	21,210	12,080	9,130
Hodgkin lymphoma	8,260	4,650	3,610	1,070	630	440
Non-Hodgkin lymphoma	72,240	40,080	32,160	20,140	11,450	8,690
Myeloma	30,280	17,490	12,790	12,590	6,660	5,930
Other Cancers						
Bones and joints	3,260	1,820	1,440	1,550	890	660
Soft tissue (including heart)	12,390	6,890	5,500	4,990	2,670	2,320

*Rounded to the nearest 10; estimated new cases exclude basal cell and squamous cell skin cancers and in situ carcinomas except urinary bladder. About 63,410 cases of carcinoma in situ of the female breast and 74,680 cases of melanoma in situ will be newly diagnosed in 2017. †Estimated deaths for colon and rectal cancers are combined. ‡More deaths than cases may reflect lack of specificity in recording underlying cause of death on death certificates and/or an undercount in the case estimates.

Source: Estimated new cases are based on cancer incidence rates from 49 states and the District of Columbia during 1995-2013 as reported by the North American Association of Central Cancer Registries (NAACCR), representing about 98% of the U.S. population. Estimated deaths are based on U.S. mortality data during 1997-2013, National Center for Health Statistics, Centers for Disease Control and Prevention.

Table 3

Inherited Cancer Risk

Cancers	Syndrome	Associated Gene(s)
Leukemias and lymphomas	Ataxia telangiectasia	<i>ATM</i>
Basal cell carcinoma and medulloblastoma	Basal cell nevus syndrome	<i>PTCH1, PTCH2, SUFU</i>
All cancers	Bloom syndrome	<i>BLM</i>
Breast, ovarian, pancreatic, and prostate cancers	Breast-ovarian cancer syndrome	<i>BRCA1, BRCA2</i>
Breast, thyroid, and endometrial cancers	Cowden syndrome	<i>PTEN</i>
Breast and stomach cancers	Diffuse gastric and lobular breast cancer syndrome	<i>CDH1</i>
Colorectal cancer, medulloblastoma	Familial adenomatous polyposis	<i>APC</i>
Melanoma and pancreatic cancer	Familial atypical multiple mole-melanoma syndrome	<i>CDKN2A</i>
Glioblastoma and melanoma	Familial glioma-melanoma syndrome	<i>CDKN2A</i>
Retinal cancer, pineoblastoma, and bone and soft tissue sarcomas	Retinoblastoma predisposition syndrome	<i>RBI</i>
Leukemia and myelodysplastic syndrome (MDS)	Inherited bone marrow failure syndromes, such as Fanconi's anemia and telomere syndromes	<i>FANCC, FANCF, FANCG, FANCS, BRCA1, TERT, TERC</i>
Kidney cancer and uterine fibroids	Hereditary leiomyomatosis and renal cell cancer	<i>FH</i>
Pancreatic cancer	Hereditary pancreatitis/familial pancreatitis	<i>PRSS1, SPINK1</i>
Leukemias, breast cancer, glioblastoma, choroid plexus carcinoma, adrenocortical carcinoma, and bone and soft tissue cancers	Li-Fraumeni syndrome	<i>TP53</i>
Low grade gliomas, neurofibromas, neurofibrosarcomas, meningiomas, and ependymomas	Neurofibromatosis type I and neurofibromatosis type II	<i>NF1 and NF2</i>
Glioblastoma, colorectal cancer, and endometrial cancer	Brain tumor polyposis type I	<i>MLH1, PMS2</i>
Medulloblastoma, abdominal desmoid tumors, and colorectal cancer	Brain tumor polyposis type II	<i>APC</i>
Colorectal and endometrial cancers	Lynch syndrome	<i>EPCAM, MLH1, MSH2, MSH6, PMS2</i>
Rhabdoid tumors of brain, kidney, and extra-renal sites	Rhabdoid predisposition syndrome	<i>hSNFS, INI1</i>
Subependymal giant cell astrocytoma, renal angioliopomas, and cardiac rhabdomyomas	Tuberous sclerosis complex	<i>TSC1 and TSC2</i>
Leukemias, lymphomas, and MDS	Hereditary myeloid malignancy syndromes, such as familial MDS/acute myeloid leukemias	<i>RUNX1, GATA2, CEBPA, ETV6, DDX41, ANKRD26, ATG2B/GSKIP</i>
Pineoblastoma, pleuro-pulmonary blastoma, lymphoma and glioblastoma	DICER syndrome	<i>DICER1</i>
Pancreatic cancers, pituitary adenomas, benign skin and fat tumors	Multiple endocrine neoplasia 1	<i>MEN1</i>
Thyroid cancer and pheochromocytoma	Multiple endocrine neoplasia 2	<i>RET, NTRK1</i>
Pancreatic, liver, lung, breast, ovarian, uterine, and testicular cancers	Peutz-Jeghers syndrome	<i>STK11/LKB1</i>
Tumors of the spinal cord, cerebellum, retina, adrenals, and kidneys	von Hippel-Lindau syndrome	<i>VHL</i>
Kidney cancer	Wilms' tumor	<i>WT1</i>
Skin cancer	Xeroderma pigmentosum	<i>XPD, XPB, XPA</i>

This list is not meant to be exhaustive, but contains some of the more commonly occurring cancer syndromes.
Source: <http://www.cancer.gov/about-cancer/causes-prevention/genetics/risk-assessment-pdq> and <https://rarediseases.info.nih.gov/diseases/diseases-by-category/1/rare-cancers>

Table 4

Cancer-causing Pathogens

Bacteria

Infectious Agent	Cancer	% of global cancer cases attributable to infection*
<i>Helicobacter pylori</i>	Stomach cancers	32.5

Parasites

Infectious Agent	Cancer	% of global cancer cases attributable to infection*
<i>Clonorchis sinensis</i>	Biliary, gallbladder, and pancreatic cancers	0.1
<i>Opisthorchis viverrini</i>	Biliary, gallbladder, and pancreatic cancers	
<i>Schistosoma haematobium</i>	Bladder cancer	0.3

Viruses

Infectious Agent	Cancer	% of global cancer cases attributable to infection*
Epstein-Barr virus (EBV)	Hodgkin and certain non-Hodgkin lymphomas, and stomach and nasopharyngeal cancers	5.4
Hepatitis B/C viruses (HBV and HCV)	Hepatocellular carcinoma	29.5
Human herpes virus type-8 (HHV-8; also known as Kaposi sarcoma herpes virus)	Kaposi sarcoma and certain form of lymphoma	2.1
Human immunodeficiency virus (HIV)	Kaposi sarcoma and non-Hodgkin lymphoma	
Human papillomavirus (HPV)	Anal, cervical, head and neck, oral, penile, vaginal, and vulvar cancers	30
Human T-cell lymphotropic virus, type-1 (HTLV-1)	T-cell leukemia and lymphoma	0.1
Merkel cell polyomavirus (MCV)	Merkel cell carcinoma	

* where known

data from Ref 76

Table 5

Surgeries for the Prevention of Cancer

Genetic Mutation	Cancer	Technique	Removes
APC	Colon cancer	Colectomy	Colon/large intestine
BRCA1 or BRCA2	Breast and ovarian cancers	Mastectomy and salpingo-oophorectomy	Breasts, and ovaries and fallopian tubes
CDH1	Stomach cancer	Gastrectomy	Stomach
Mutations associated with Lynch syndrome	Colon, endometrial, and ovarian cancers	Colectomy, hysterectomy, and salpingo-oophorectomy	Colon/large intestine, uterus, and ovaries and fallopian tubes
RET	Medullary thyroid cancer	Thyroidectomy	Thyroid

Table 6

Selected Cancer-focused Data Sharing Initiatives**

Name	Description	Intent	Access
100,000 Genomes Project	Genomics England-led whole genome sequencing initiative	Improve treatment and outcomes through personalized medicine	Authorized
American Association for Cancer Research (AACR) Project Genomics, Evidence, Neoplasia, Information, Exchange (GENIE)	International data-sharing project led by the AACR	Catalyze precision oncology by developing a regulatory-grade registry that aggregates, harmonizes, and links clinical-grade cancer genomic data with a select amount of clinical data for patients treated at multiple institutions and by making all de-identified data publicly available	Open
American Society of Clinical Oncology (ASCO) CancerLinQ	ASCO-led data acquisition and analysis system that collects clinical data from patients' electronic health records	Improve patient outcomes by tracking the quality of care in real time	Authorized
BRCA Exchange from The Global Alliance for Genomics and Health	A comprehensive, global data repository of BRCA1 and BRCA2 genetic variants and associated clinical data	Catalog all BRCA genetic variants and collect individual-level evidence for variants' pathogenicity	Open
Cancer Core Europe	A European consortium sharing a common translational genomic platform to conduct cutting-edge cancer clinical trials	Drive innovative translational research through data sharing	Authorized
Database of Genotypes and Phenotypes	National Center for Biotechnology Information-led repository of individual-level phenotype, exposure, genotype, and sequence data, and the associations between them	Allow complex analyses of genetic associations with phenotypic and disease characteristics	Open or authorized depending on study
Genomic Data Commons	A National Cancer Institute-led database to store, analyze, and distribute cancer genomics research data	Enable data sharing across cancer genomic studies in support of precision cancer medicine	Open or authorized depending on study
International Cancer Genome Consortium for Medicine (ICGCMed)	Links existing as well as new genomic data being generated, to clinical and health information, across the cancer spectrum	Develop preventive strategies, markers for early detection, more specific criteria and methods for diagnoses and prognoses, and interventions based on matching the molecular subtype of disease with the most effective combinations of therapies	Open or authorized depending on study
National Cancer Database	Clinical oncology database sourced from hospital registry data that are collected in more than 1,500 Commission on Cancer-accredited facilities; data represent more than 70 percent of newly diagnosed cancer cases nationwide	Analyze and track patients with malignant neoplastic diseases as well as their treatments and outcomes	Open
NCTN/NCORP Data Archive	Repository of patient-level data from phase III clinical trials that are part of National Clinical Trials Network (NCTN), Community Oncology Research Program (NCORP), and the Canadian Cancer Trials Group	Make data sets available in a timely manner and to researchers who wish to analyze the data in secondary studies to enhance the public health benefit of the original work	Authorized
Oncology Research Information Exchange Network (ORIEN)	Partnership among North American cancer centers coordinating collection and access to genomic, clinical, and epidemiologic data	Aid future clinical decision-making and advance precision cancer medicine	Authorized
Project Data Sphere	Repository of historical, patient-level, comparator-arm data from academic and industry phase III cancer clinical trials	Generate new insights into cancer research and enable new and innovative research	Authorized

** This list is not meant to be comprehensive

Supplemental
Table 1

FDA-approved Therapeutics for Cancer Risk Reduction or Treatment of Precancerous Conditions*

Cancer Risk Reduction

Condition	Generic Name	Trade Name
Breast cancer	raloxifene tamoxifen	Evista Nolvadex
Cervical, vulvar, vaginal, and anal cancers and dysplasia; genital warts	human papillomavirus quadrivalent vaccine (Types 6, 11, 16, and 18)	Gardasil
Cervical, vulvar, vaginal, and anal cancers and dysplasia; genital warts	human papillomavirus 9-valent vaccine (Types 6, 11, 16, 18, 31, 33, 45, 52, and 58)	Gardasil 9
Cervical cancer and cervical dysplasia	human papillomavirus bivalent vaccine (Types 16 and 18)	Cervarix

Treatment of Precancerous Conditions

Condition	Generic Name	Trade Name
Actinic keratosis	ingenol mebutate	Picato
	fluorouracil	Adricil
	diclofenac sodium	Voltaren
	5-aminolevulinic acid + photodynamic therapy (PDT) masoprocol/nordihydroguaiaretic acid	Actinex
Bladder dysplasia	bacillus Calmette-Guerin (BCG)	Valstar
	valrubicin	
Esophageal dysplasia	porfimer sodium + photodynamic therapy (PDT)	Photofrin

*adapted from Wu X, Patterson S, Hawk E. Chemoprevention - History and general principles. Best Practice Research Clinical Gastroenterology. 2011;25:445-59.

FDA-approved Therapeutics for the Treatment of Cancer

DNA-synthesis Inhibitors (Antimetabolites)

Approved Indication	Generic Name	Trade Name
Multiple cancers	5-fluorouracil (5FU)	Aldicil
Certain leukemias	6-mercaptopurine	Purinethol
Breast and colorectal cancers	capecitabine	Xeloda
Certain leukemias; lymphoma	cladribine	Ultrac
Certain leukemias	clofarabine	Clolar
Certain leukemias; lymphoma	cytarabine	DepoCyt, Cytosar-U
Stomach cancer	flouxuridine	FUDR
Certain leukemias; lymphoma	fludarabine	Fludara
Breast, lung, ovarian, and pancreatic cancers	gemcitabine	Gemzar
Certain leukemias	hydroxyurea	Droxia
Multiple cancers	methotrexate	Rheumatrex, Trexall
Multiple cancers	mitomycin	Mutamycin
Certain leukemias; lymphoma	nelarabine	Arranon
Lung and ovarian cancers; mesothelioma	pemetrexed	Alimta
Certain leukemias	pentostatin	Nipent
Certain lymphomas	pralatrexate	Folotylin

Approved Indication	Generic Name	Trade Name
Colon, lung, and rectal cancers	irinotecan	Camptosar; Camptosar
Pancreatic cancer	irinotecan liposome injection	Onivyde
Brain tumors	lomustine	CE-NU
Multiple cancers	methotrexate hydrochloride	Mustargen
Multiple cancers	melfalan	Alkeran
Certain lymphomas	methoxsalen	Uvadex
Multiple cancers	mitoxantrone	Novantrone
Colon cancer	oxaliplatin	Eloxatin
Testicular cancer	plicamycin	Mithracin
Certain lymphomas	procarbazine	Matulane
Pancreatic cancer	streptozocin	Zanosar
Melanoma; certain brain cancers	temozolomide	Temodar
Certain leukemias	thioguanine	Thioguanine Tablet
Multiple cancers	thiotepa	Thiotepex
Ovarian and small cell lung cancers	topotecan	Hycamtin
Colorectal cancer	trifluridine AND tioracil	Lonsurf
Bladder cancer	valrubicin	Valstar

Cell Cytoskeleton-modifying Agents

Approved Indication	Generic Name	Trade Name
Ovarian cancer	altretamine	Hexalen
Certain leukemias	arsenic trioxide	Trisenox
Multiple cancers	benadamustine	Treanda
Certain lymphomas; squamous cell and testicular cancers	bleomycin sulfate	Blenoxane
Certain leukemias	busulfan	Myleran; Busulfex
Breast, lung, and ovarian cancers	carboplatin	Paraplatin; Paraplatin
Brain tumors; certain lymphomas	carmustine	BCNU
Multiple cancers	chlorthalidone	Leukeran
Multiple cancers	cisplatin	Platinol-AQ
Multiple cancers	cyclophosphamide	Cytoxan
Melanoma; certain brain cancers	dacarbazone	DTIC-Dome
Multiple cancers	dactinomycin	Cosmegen
Certain leukemias	daunorubicin; daunomycin	Cerubidine
Multiple cancers	doxorubicin hydrochloride	Adriamycin PFS; Adriamycin RDE
Certain leukemias; breast epithelial and stomach cancers	epirubicin hydrochloride	Elice
Testicular and lung cancers	etoposide phosphate	Etoposophos; Toposar; VePesid
Certain leukemias	idarubicin	Idamycin PFS
Multiple cancers	ifosfamide	Ifex

Antineutrients

Approved Indication	Generic Name	Trade Name
Certain leukemias	asparaginase	Elspar; Kidrolase

Gene-transcription Modifiers

Approved Indication	Generic Name	Trade Name
Certain lymphomas	beavatone	Targintin
Liposarcoma and leiomyosarcoma	trabectedin	Yondelis
Certain leukemias	trifluoromethyl-L-homocysteine (all-trans retinoic acid)	Vesanoicid

Radiation-emitting Drugs

Approved Indication	Generic Name	Trade Name
Prostate cancer bone metastases	radium Ra 223 dichloride	Xofigo

Cell-death Promoting Agents

Approved Indication	Generic Name	Trade Name
Certain form of leukemia	venetoclax	Venclexta

Hormones/Antihormones

Approved Indication	Generic Name	Trade Name
Prostate cancer	abiraterone	Plenaxis
Prostate cancer	abiraterone acetate	Zytiga
Breast cancer	anastrozole	Arimidex
Prostate cancer	bicalutamide	Casodex
Prostate cancer	degarelix	Firmagon
Prostate cancer	enzalutamide	Xtandi
Prostate cancer	estramustine	Emcyf; Estracyt
Breast cancer	exemestane	Aromasin
Prostate cancer	flutamide	Euflexin
Metastatic breast cancer	fulvestrant	Faslodex
Prostate and breast cancers	goserelin acetate implant	Zoladex
Breast cancer	letrozole	Femara
Prostate cancer	leuprolide acetate	Eligard; Luproin; Viadur
Breast and endometrial cancers	megestrol acetate	Megace; Megace Oral Suspension
Breast cancer	tamoxifen	Nolvadex
Prostate cancer	triptorelin pamoate	Trelar Depot

Immune-system Modifiers

Approved Indication	Generic Name	Trade Name
Multiple cancers	interferon alfa-2b	Intron A
Melanoma; kidney cancer	aldesleukin	Prolekin
Myelodysplastic syndrome; certain lymphomas	lenalidomide	Revlimid
Multiple myeloma	pomalidomide	Pomalyst

Proteasome Inhibitors

Approved Indication	Generic Name	Trade Name
Multiple myeloma	bortezomib	Velcade
Multiple myeloma	carfilzomib	Kyprolis
Multiple myeloma	ixazomib	Ninlaro

Protein-translation Inhibitors

Approved Indication	Generic Name	Trade Name
Certain type of leukemia	omacetaxine mepesuccinate	Synlibo

Epigenome-modifying Agents

Approved Indication	Generic Name	Trade Name
Myelodysplastic syndrome	azacitidine	Vidaza
Certain lymphomas	belinostat	Beleodaq
Myelodysplastic syndrome	decitabine	Dacogen
Multiple myeloma	panobinostat	Farydak
Certain lymphomas	romidepsin	Istodax
Certain lymphomas	vorinostat	Zolinza

DNA-repair Inhibitors

Approved Indication	Generic Name	Trade Name
Certain types of ovarian, fallopian tube, and primary peritoneal cancer	brentuximab vedotin	Adcetris
Certain form of ovarian cancer*	olaparib	Lynparza
Certain type of ovarian cancer	rucaparib*	Rubraca

Immune-checkpoint Inhibitors

Approved Indication	Generic Name	Trade Name
Certain type of bladder cancer and lung cancer	atezolizumab	Tecentriq
Certain types of bladder cancer and skin cancer	avelumab	Bavencio
Certain type of bladder cancer	durvalumab	Imfinzi
Melanoma	ipilimumab	Yervoy
Multiple cancers	nivolumab	Opdivo
Multiple cancers	pembrolizumab	Keytruda

Bone-remodeling Inhibitors

Approved Indication	Generic Name	Trade Name
Potentially lethal complication of advanced cancers*	denosumab	Xgeva

Angiogenesis Inhibitors

Approved Indication	Generic Name	Trade Name
Kidney cancer	axitinib	Inlyta
Multiple cancers	bevacizumab	Avastin
Thyroid cancer; kidney cancer	cabozantinib	Cometriq; Cabometyx
Certain type of thyroid cancer	lenvatinib	Lenvima
Kidney cancer; soft tissue sarcoma; gastrointestinal stromal tumors	pazopanib	Votrient
Colorectal cancer; gastrointestinal stromal tumors and liver cancer	ramucicimab	Cyramza
Colorectal cancer; gastrointestinal stromal tumors and liver cancer	regorafenib	Stivarga
Kidney cancer; certain type of thyroid cancer	sorafenib	Nexavar

Angiogenesis Inhibitors (continued)

Approved Indication	Generic Name	Trade Name
Gastrointestinal stromal tumors; kidney cancer; some pancreatic cancers	sunitinib	Sutent
Thyroid cancer	vandetanib	Caprelsa
Colorectal cancer	ziv-aflibercept	Zaltrap

Cell-lysis Mediators

Approved Indication	Generic Name	Trade Name
Certain leukemias	alemtuzumab	Campath
Certain types of leukemia	blinatumumab	Blincyto
Certain lymphomas	brentuximab vedotin	Adcetris
Multiple myeloma	daratumumab	Darzalex
Neuroblastoma	dinutuximab	Unituxin
Multiple myeloma	elotuzumab	Empliciti
Certain lymphomas	ibritumomab	Zevalin
Certain form of leukemia; certain type of lymphoma	obinutuzumab	Gaszyva
Certain leukemias	ofatumumab	Azerta
Certain lymphomas	rituximab	Rituxan

Oncolytic Virus

Approved Indication	Generic Name	Trade Name
Melanoma	talimogene laherparepvec*	Imlygic

Therapeutic Vaccines

Approved Indication	Generic Name	Trade Name
Prostate cancer	sipuleucel-T	Provenge

Cell-signaling Inhibitors

Approved Indication	Generic Name	Trade Name
HER2+ breast cancer	ado-trastuzumab emtansine	Kadcyla
Certain type of lung cancer	afatinib	Gilotrif
Certain type of lung cancer	alectinib	Alecensa
Certain type of leukemia	bosutinib	Bosulif
Certain type of lung cancer	brigatinib	Alunbrig
Certain type of metastatic ALK-positive lung cancer	ceritinib	Zykadia
Colon cancer; head and neck cancer	cetuximab	Erbuxin
Certain form of melanoma*	cobimetinib	Cotellic AND Zelboraf
Specific lung cancers*	crizotinib	Xalkori
Certain type of melanoma* and lung cancer*	dabrafenib	Tafinlar

Some leukemias	dasatinib	Sprycel
Some lung cancers*;	erlotinib	Tarceva
pancreatic cancer		
Some pancreatic cancers; kidney cancer; noncancerous kidney tumors; HER2+ breast cancer; neuroendocrine tumors	everolimus	Afinitor
Lung cancer	gefitinib	Iressa
Certain form of lymphoma and non-Hodgkin lymphoma	ibrutinib	Imbruvica
Certain types of leukemia and lymphoma	idelalisib	Zydelig
Some leukemias; stomach cancer; certain type of skin cancer	inatinib	Gleevec; Glivec
HER2+ breast cancer	lapatinib	Tykerb
Certain types of leukemia	midostaurin*	Rydapt
Certain form of lung cancer	nectinumab	Portrazza
Certain type of breast cancer	neratinib	Nerlynx
Some leukemias	nilotinib	Tasigna
Soft tissue sarcoma	olaratumab	Lartruvo
Certain form of lung cancer*	osimertinib	Tagrisso
Certain subtype of breast cancer	palbociclib	Ibrance
Colon cancer	panitumumab	Vectibix
HER2+ breast cancer	pertuzumab	Perjeta
Certain types of leukemia	ponatinib	Iclusig
Certain type of breast cancer	ribociclib	Kisqali
Myelofibrosis	ruxotinib	Jakafi
Most common type of skin cancer	sonidegib	Odomzo
Certain types of melanoma* and lung cancer*	trametinib	Mekinist
HER2+ breast cancer	trastuzumab	Herceptin
Kidney cancer	temsirolumab	Torisel; Torsiel
Thyroid cancer	vandetanib	Caprelsa
Melanoma*	vemurafenib	Zelboraf
Most common type of skin cancer	vismodegib	Erivedge

* Includes comparison diagnostic. Some drugs are available in multiple formulations, those have only been listed once. Where multiple trade names are used, only the most common have been listed.

Surgical and Radiotherapy Treatments for Cancer

Surgical Treatments

Used to Treat	Procedure
Breast cancer	Mastectomy
Breast cancer	Lumpectomy
Testicular cancer	Orchiectomy
Multiple head, neck, and chest cancers	Video-Assisted Thoracoscopic Surgery (VATS)
Variety of abdominal cancers	Laparoscopic surgery
Sarcoma and other cancers	Reconstructive and limb-sparing surgeries
Kidney cancer	Partial nephrectomy
Pancreatic cancer	The Whipple/modified Whipple procedure
Stomach-sparing pancreatic surgery for pancreatic cancer	Pancreatoduodenectomy
Rectal cancer	Total mesorectal excision
Prostate cancer	Nerve-sparing prostatectomy
Rectal cancer	Transanal Endoscopic Microsurgery (TEM)
Testicular cancer	Modified retroperitoneal lymph node dissection
Breast, melanoma, and colorectal cancers	Sentinel lymph node biopsies
Breast cancer, laryngeal cancer, and anal/rectal cancer	Neoadjuvant chemotherapy
Multiple cancers	Robotic or computer-assisted surgeries

Radiotherapy Treatments

Used to Treat	Procedure
Prostate, cervical, other cancers	Brachytherapy
Multiple cancers	Image-guided radiation therapy (IGRT)
Multiple cancers	Intensity Modulated Radiation Therapy (IMRT)
Brain metastases	Stereotactic radiosurgery
Liver and lung cancers	Stereotactic body radiation therapy
Multiple cancers	Neoadjuvant and adjuvant radiotherapy combined with radiation therapy
Head and neck cancers	Radiation therapy combined with molecularly targeted therapy (cetuximab)
Prostate cancer	Radiation therapy combined with androgen deprivation
Prostate cancer	Adjuvant radiotherapy
Pediatric cancers	Proton therapy
Unresectable glioblastoma, lung cancer, head and neck cancer, esophageal cancer, pancreatic cancer	Concurrent chemotherapy and radiation therapy
Anal cancer, head and neck cancer	Radiation with chemotherapy can produce cure with organ preservation
Breast cancer	Radiation and surgery (with or without chemotherapy) can produce cure with organ preservation