

Testable Chemotherapeutic Drugs and Their Clinical Application

Substance	Drug	Application
Alkylating agents		
Nitrogen-mustards Base-alkylation at N7-position	Cyclophosphamide (Cytoxan)	Advanced breast carcinoma Advanced ovarian carcinoma Rhabdomyosarcoma, Ewing-sarcomas Small cell lung carcinoma Morbus Hodgkin Leukemia (NHL, ALL adults)
	Ifosfamide (Ifex) Trafosphamide (Ixoten)	Lung carcinoma Ovarial carcinoma Testicular tumor Ewing-sarcoma Zervix carcinoma Breast carcinoma Pancreatic carcinoma Malignant lymphoma
	Melphalan (Alkeran)	Multiple Myeloma (Plasmocytoma) Ovarial carcinoma
	Chlorambucil (Leukeran)	Leukemia (CML, NHL, MH) Advanced ovarian carcinoma Breast carcinoma
Nitrosoureas Base-alkylation at O6-position	Carmustine BCNU	Primary brain tumors Multiple myeloma Leukemia (malignant Lymphoma, Morb. Hodgkin) Lymphosarcoma Advanced gastrointestinal carcinoma
	Lomustine CCNU (CeeBU)	Morbus Hodgkin Tumors o.t. central nervous system Metast. malignant melanoma Lung carcinoma
	Nimustine ACNU	Malignant glioma Small cell lung carcinoma (brain metas.) Colorectal carcinoma Advanced stomach carcinoma Leukemia (CML, NHL, MH)
Hydrazines Base-alkylation at O6-position	Dacarbazine (DTIC-Dome)	Metast. malignant melanoma
Aziridines	Thiotepa (Thioplex)	localized apl.: Bladder-papilloma and carcinoma systemic apl.: Breast carcinoma Ovarial carcinoma Chron. Leukemia Morbus Hodgkin

	Mitomycin C (Mutamycin, Mitozytex)	Bladder tumor Stomach carcinoma Lung carcinoma Pancreatic carcinoma Colorectal carcinoma Breast carcinoma Liver carcinoma Zervix carcinoma Esophagal carcinoma Head-neck carcinoma CML Osteosarcoma
Alkyl Sulfonates	Busulfan	
	Treosulfan	
Platinum compounds (N7)		
	Cisplatin (Platinol)	Lung carcinoma (NSCLC, SCLC) Bladder carcinoma Endometrial carcinoma Testicular tumor Head-neck carcinoma Melanoma Ovarial carcinoma Prostate carcinoma Sarcoma Cervical carcinoma
	Carboplatin (Paraplatin)	Small cell lung carcinoma Head-neck carcinoma Zervical carcinoma Epithelial ovarian carcinoma
	Oxaliplatin (Eloxatin)	Metast. colorectal carcinoma
Antifolates		
	Methotrexate MTX	Chorion epithelioma Breast carcinoma Head-neck carcinoma Leukemia (NHL, ALL) Osteosarcoma Small cell lung carcinoma
	Pemetrexed	NSCLC Mesothelioma
Purine-Analoga		
	Cladribine 2CdA (Leustatin)	Leukemia
Pyrimidin-Analoga		
	5 Fluoruracil (Adrucil, Ribofluor, Verrumal)	Colorectal carcinoma Stomach carcinoma Pancreatic carcinoma Metast. breast carcinoma
	Capecitabine (Xeloda)	Colorectal carcinoma Metast. breast carcinoma
	Gemcitabine (Gemzar)	Bladder carcinoma Non-small cell lung carcinoma Pancreatic adeno carcinoma
	Cytarabine araC (Cytosar-U)	Leukemia (AML, ALL, CML)

Topoisomerase II inhibitors		
Anthrazyclines (intercalating)	Doxorubicin (<i>adriamycin, Rubex, Doxil</i>)	Small cell lung carcinoma Endometrial carcinoma Ewing-Sarcom Bladder carcinoma Hodgkin-lymphoma Stomach carcinoma Breast carcinoma Neuroblastoma, Osteosarcoma Ovarial carcinoma
	Epirubicin (<i>Ellence</i>)	Breast carcinoma Ovarial carcinoma Stomach carcinoma Lung carcinoma Soft tissue sarcoma
	Daunoruicin (<i>Cerubidine</i>)	ALL AML
Anthrazyclines (intercalating)	Mitoxantrone (<i>Novantrone</i>)	Breast carcinoma Leukemia (malignant Lymphome) Primary liver carcinoma Ovarial carcinoma
Podophyllo- toxine derivates (non-intercalating)	Etoposide VP16 (<i>Vepesid</i>)	Small cell Lung carcinoma Non-small cell lung carcinoma Leukemia (NHL, MH, AML) Testicular tumor Chorion carcinoma Ovarial carcinomae
Topoisomerase I inhibitors		
	Topotecan (<i>Hycamtin</i>)	Ovarial carcinoma
	Irinotecan (<i>Camptosar</i>)	Colorectal carcinoma
Microtubuli-inhibitors		
Taxanes	Paclitaxel (<i>Taxol</i>)	Ovarial carcinoma Breast carcinoma Non-small cell lung carcinoma
	Docetaxel (<i>Taxotere</i>)	Breast carcinoma Non-small cell lung carcinoma
Vinca alkaloides	Vincristine (<i>Oncovin</i>)	Leukemia (akute Leukemia, ALL, MH) Small cell lung carcinoma Breast carcinoma Wilms-tumor Rhabdomyosarcoma Ewing-sarcoma Neuroblastoma
	Vinblastine (<i>Velban</i>)	Leukemia (NHL, MH) Testicular tumor Kaposi-sarcoma Breast carcinoma
	Vinorelbine (<i>Navelbine</i>)	Non-small cell lung carcinoma Breast carcinoma
	Estramustine	Advanced prostate carcinoma
Hormones		
	Tamoxifen (<i>Nolvadex</i>)	Breast carcinoma

Special inhibitors			DrugTarget
Antibodies	Cetuximab (Erbitux) Erlotinib (Tarceva)	Colorectal carcinoma	EGF-R
	Bevacizumab (Avastin)	Colorectal carcinoma	VEGF
	Trastuzumab (Herceptin)	Breast carcinoma	ERB-B2
Tyrosinkinase inhibitors	Imatinib (Gleevec)	Leukemia (CML) gastrointest. Tumors (GIST)	bcr-abl c-Kit PDGFR a / b
	Gefitinib (Iressa)	Non-small cell lung carcinoma	EGF-R
Farnesyl-transferase-inhibitors	Arglabin	Colorectal carcinoma Pankreatic carcinoma	FNTB
	Lonafarnib Tipifarnib	Non small cell lung carcinoma (trials)	
Aromatase-inhibitors	Exemestane Formestane Anastrozole Letrozole	Breast carcinoma	Aromatase
FGF-inhibitors	Suramin		bFGF
COX-inhib.	Celecoxib	Colorectal carcinoma	cox2
Proteasome inhibitors	Bortezomib (Velcade)	Multiple myeloma	p65 NF-kB
Anti-Adrogens	flutamide, nilutamide, bicalutamide, cyproterone acetate	Prostate CA	AR
Anti-Adrogens	flutamide, nilutamide, bicalutamide, cyproterone acetate	Prostate CA	AR
Bcl2-Inhibitors	Oblimersen		Bcl2