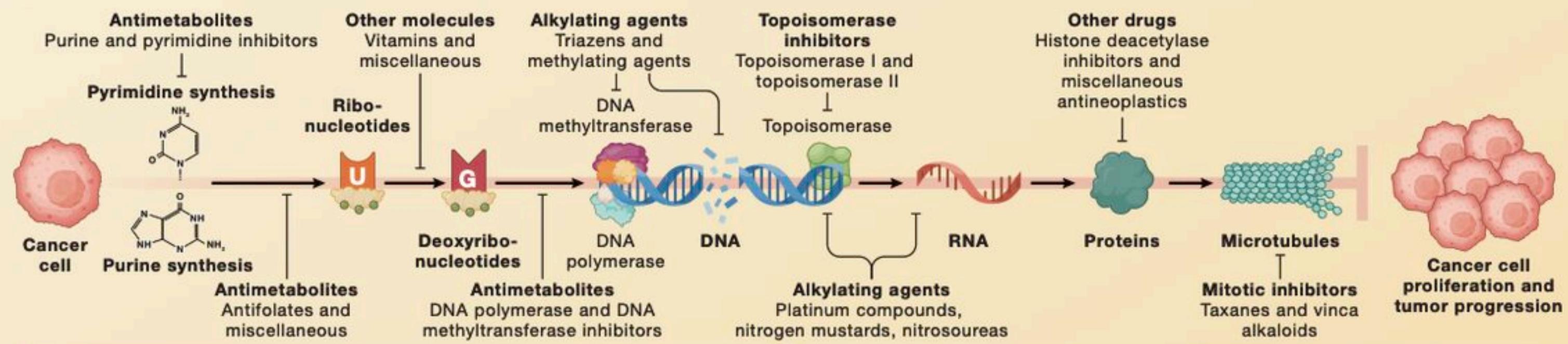


# Cancer chemotherapy

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ALKYLATING AGENTS			
	Drug	Mechanism of action	Therapeutic applications
Platinum compounds	Cisplatin	① Alkylating agents	Bladder, testicular, ovarian, head and neck, uterus, lung cancer
	Carboplatin	Alkyl group	Lung cancer, ovarian cancer
	Oxaliplatin		Colorectal cancer
	Carmustine		Brain tumor, lymphoma, multiple myeloma
	Lomustine		Brain and lung tumor, malignant melanoma, Hodgkin's lymphoma
	Streptozocin		Pancreatic cancer
	Bendamustine	② DNA alkylation	Chronic lymphocytic leukemia, B-cell non-Hodgkin's lymphoma, multiple myeloma
	Chlorambucil	DNA crosslink	Hodgkin's lymphoma, chronic lymphocytic leukemia, giant follicular lymphoma
	Cyclophosphamide		Multiple solid tumors
	Ifosfamide		Sarcoma, testicular, ovarian, bronchial, breast, pancreatic, endometrial cancer, lymphoma
Nitrogen mustards	Mechlorethamine	③ Multiple DNA strand breaks	T-cell lymphoma, B-cell lymphoma, chronic leukemia, lung cancer, medulloblastoma
	Melphalan		Multiple myeloma, ovarian cancer, neuroblastoma, melanoma, sarcoma
	Dacarbazine	④ Cell cycle arrest and death	Malignant melanoma, Hodgkin's lymphoma, sarcoma
	Temozolomide		Brain tumors
Triazenes	Procarbazine		Hodgkin's lymphoma

ANTIMETABOLITES			
	Drug	Mechanism of action	Therapeutic applications
Purine antagonists	Fluorouracil	Purine antagonists	Colorectal, breast, stomach, pancreatic, head and neck cancer
	Capecitabine		Colorectal, breast and gastric cancer
	Floxuridine	DNA incorporation	Digestive system cancers
	6-mercaptopurine	RNA incorporation	Acute lymphoblastic or lymphocytic leukemia
	Thioguanine	HGPRT and thymidylate synthase	Acute myeloblastic or lymphoblastic leukemia
Antifolates	Methotrexate	Inosine synthesis	Leukemia, breast, skin, head and neck, lung, uterine cancer
	Pemetrexed	Dihydrofolate reductase	Non-squamous non-small cell lung cancer, malignant pleural mesothelioma
	Pralatrexate	Thymidylate synthase	T-cell lymphoma
		Nucleotide synthesis	
Enzyme Inhibitors	Cladribine	Thymidylate synthase	Hairy cell leukemia
	Fludarabine	Ribonucleotide reductase	B-cell chronic lymphocytic leukemia
	Gemcitabine		Pancreatic, lung, ovarian, breast cancer
	Clofarabine		Acute lymphoblastic leukemia
	Nelarabine		T-cell lymphoblastic leukemia and lymphoma
	Cytarabine	DNA polymerase	Acute myeloid and other leukemias
		DNA crosslinks	
Mitosis		DNA terminator	

MITOTIC INHIBITORS			
	Drug	Mechanism of action	Therapeutic applications
Taxanes	Cabazitaxel	Microtubule polymerization	Metastatic castration-resistant prostate cancer
	Docetaxel		Breast, lung, prostate, stomach, head and neck cancer
	(Nab) Paclitaxel		Breast, ovarian, lung and pancreatic cancer, AIDS-related Kaposi's sarcoma
Vinca alkaloids	Vinblastine	Microtubule degradation	Hodgkin's lymphoma, testicular and breast cancer, Kaposi's sarcoma
	(Liposome) Vincristine		Leukemia, lymphoma, neuroblastoma, sarcomas
	Vinorelbine	Mitosis block and cell death	Lung cancer and breast cancer

TOPOISOMERASE INHIBITORS			
	Drug	Mechanism of action	Therapeutic applications
TOP1 Inhibitors	(Liposomal) Irinotecan	TOP1 inhibitors	Colorectal, small-cell lung, pancreatic cancer
	Topotecan		Ovarian cancer, small cell lung cancer, cervical cancer
TOP2 Inhibitors	Etoposide (VP-16)	TOP2 inhibitors	Lung, testicular and ovarian cancer, lymphoma, acute myeloid leukemia
	Mitoxantrone		Prostate, liver and breast cancer, leukemia, non-Hodgkin's lymphoma
	Teniposide	Block of DNA unfolding and replication	Leukemia

ANTI-TUMOR ANTIBIOTICS			
	Drug	Mechanism of action	Therapeutic applications
Anthracyclines	Daunorubicin	Anthracyclines	Leukemia
	(Liposomal) Doxorubicin	DNA binding	Several solid tumors and hematological malignancies, AIDS-Kaposi's sarcoma
	Epirubicin	TOP2	Several solid tumors and hematological malignancies
	Idarubicin		Acute myeloid/lymphoid leukemia
	Valrubicin	Arrest of DNA replication	Bladder cancer
	Bleomycin	Mitomycin	Squamous cell and testicular carcinoma, lymphoma, pleural effusion
	Dactinomycin	DNA breaks and crosslinks	Several solid tumors
	Mitomycin-C	TOP1 TOP2	Stomach, pancreatic, breast, bronchial carcinoma, solid tumors
	Mitoxantrone	Dactinomycin Mitoxantrone	Prostate cancer, leukemia, non-Hodgkin's lymphoma, breast cancer, hepatocellular carcinoma