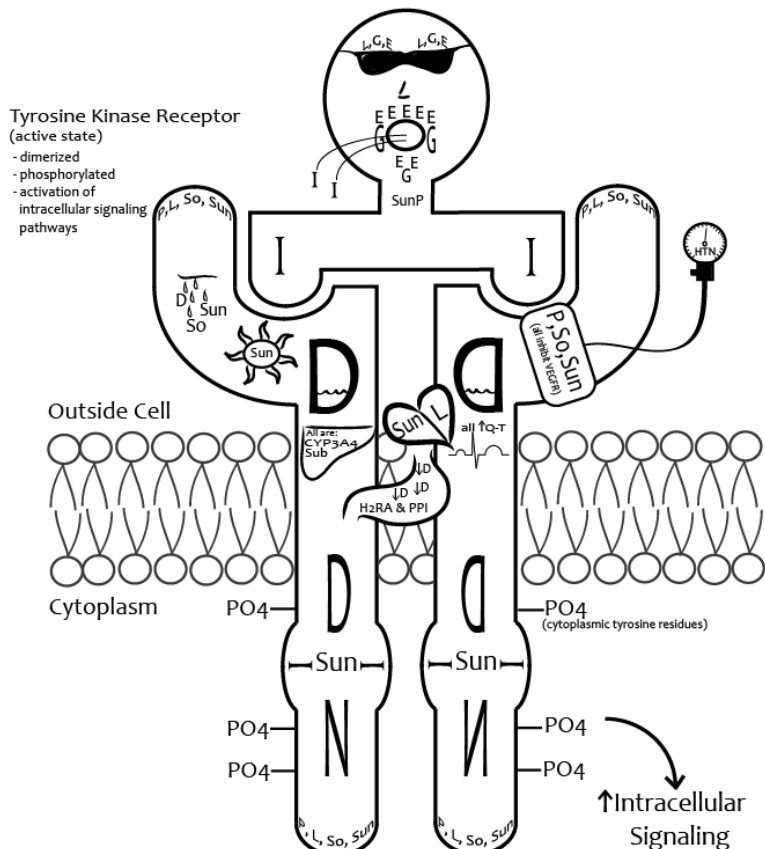


TYROne KINASE

Inhibitors of Tyrosine Kinase Signaling
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Legend for TYROne KINASE: Inhibitors of Tyrosine Kinase Signaling ©2009 Pharmacology Weekly Inc.				
	Body Part	Drug Names Represented	Target	Toxicity or Side Effect
D	Lungs Femur (bone) Bleeding wound Stomach	Dasatinib (Sprycel)	BCR-ABL PDGFR-β c-KIT EPHA2	Bone marrow suppression; Edema & pleural effusion; Hemorrhage (platelet dysfunction); Absorption ↓ by H2RA & PPI
E	Eyes (glasses) Goatee	Erlotinib (Tarceva)	EGFR	Ocular toxicity; Acneiform skin rash to face & upper trunk
G	Eyes (glasses) Goatee	Gefitinib (Iressa)	EGFR	Conjunctivitis, corneal erosions; Acneiform skin rash to face & upper trunk
I	Mouth (emesis) Joints (shoulder & knees)	Imatinib (Gleevec)	BCR-ABL PDGFR c-KIT	Nausea & vomiting; Edema; Arthralgia/myalgias; Bone marrow suppression
L	Eyes (glasses) Heart Hands Feet	Lapatinib (Tykerb)	EGFR HER-2	Ocular toxicity; Diarrhea is dose-limiting side effect; hand-foot syndrome; cardiac toxicity (↓ in LVEF)
N	Tibia & Fibula (bone)	Nilotinib (Tasigna)	BCR-ABL PDGFR c-KIT CSF-1R DDR	Bone marrow suppression; ↑ lipase; electrolyte abnormalities
P	Hands Thyroid (L lobe)	Pazopanib (Votrient)	VEGFR PDGFR c-KIT	Hypertension; Hand-foot syndrome; Hemorrhage; Hair depigmentation; Hypothyroidism
So	BP Cuff Hands Feet	Sorafenib (Nexavar)	VEGFR PDGFR-β c-KIT FLT3 CRAF BRAF RET	Hypertension; Hand-foot syndrome; Cardiac ischemia; Hemorrhage; Substrate of UGT1A9 & UGT1A1
Sun	BP Cuff Thyroid (R lobe) Sun Tattoo Heart Hands & Feet Knees (bone)	Sunitinib (Sutent)	VEGFR PDGFR c-KIT FLT3 CSF-1R RET	Hypertension; Yellow discoloration of skin; Hemorrhage; Bone marrow suppression; Cardiomyopathy; Hypothyroidism

Notes:

- All tyrosine kinase inhibitors have generic drug names ending in "nib" vs. "mab" as seen with "monoclonal antibodies".
- All of them:
 - Are administered orally
 - Cause diarrhea and rash
 - CYP3A4 substrates (watch out for drug interactions)
 - Prolong the Q-T interval on the ECG

BCR-ABL = breakpoint cluster region - Abelson; BRAF & CRAF = RAF genes; c-KIT = c-KIT receptor; CSF-1R = colony stimulating factor receptor Type 1; DDR = discoidin domain receptor; EGFR = epidermal growth factor receptor; EPHA2 = ephrin type-A receptor 2; FLT3 = FMS-like tyrosine kinase receptor 3; HER-2 = human epidermal growth factor receptor 2; PDGFR = platelet derived growth factor receptor; RET = proto-oncogene that encodes a tyrosine kinase receptor; VEGFR = vascular endothelial growth factor receptor.

This is not an exhaustive list of all side effects and/or toxicities. It is important to recognize that many chemotherapeutic agents can cause several of these side effects, but some will do it more than others.

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