KIT/PDGFR Inhibitor DCC-2618

National Cancer Institute

Source

National Cancer Institute. KIT/PDGFR Inhibitor DCC-2618. NCI Thesaurus. Code C124067.

An orally bioavailable switch pocket control inhibitor of wild-type and mutated forms of the tumor-associated antigens (TAA) mast/stem cell factor receptor (SCFR) KIT and platelet-derived growth factor receptor alpha (PDGFR-alpha; PDGFRa), with potential antineoplastic activity. Upon oral administration, DCC-2618 targets and binds to both wild-type and mutant forms of KIT and PDGFRa specifically at their switch pocket binding sites, thereby preventing the switch from inactive to active conformations of these kinases and inactivating their wild-type and mutant forms. This abrogates KIT/PDGFRa-mediated tumor cell signaling and prevents proliferation in KIT/PDGFRa-driven cancers. DCC-2618 also inhibits several other kinases, including vascular endothelial growth factor receptor type 2 (VEGFR2; KDR), angiopoietin-1 receptor (TIE2; TEK), PDGFR-beta and macrophage colony-stimulating factor 1 receptor (FMS; CSF1R), thereby further inhibiting tumor cell growth. KIT and PDGFRa are tyrosine kinase receptors that are upregulated or mutated in a variety of cancer cell types; mutated forms play a key role in the regulation of tumor cell proliferation and resistance to chemotherapy.