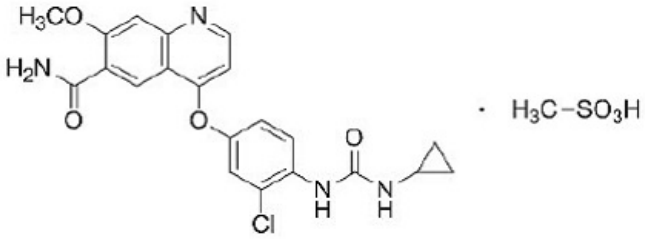
Lenvatinib

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Brand name: Lenvima®
IUPAC: 4-[3-chloro-4-(cyclopropylcarbamoylamino)phenoxy]-7-methoxyquinoline-6-carboxamide
FDA approval: Yes
Manufacturer Link
Usage:

Lenvatinib is used in the treatment of metastatic thyroid cancer and is also used as combination therapy to treat renal carcinoma.1

Lenvatinib is a kinase inhibitor. It works by preventing the growth of cancer cells. Lenvatinib comes as a capsule to take by mouth. It is usually taken once daily with or without food. Take lenvatinib at around the same time every day. Follow the directions on your prescription label carefully, and ask your doctor or pharmacist to explain any part you do not understand. Take lenvatinib exactly as directed. Do not take more or less of it or take it more often than prescribed by your doctor.

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1 Important Safety Information. (n.d.). Retrieved July 05, 2017, from http://www.lenvima.com/hcp/RAI-R-differentiated-thyroid-cancer/?gclid=Cj0KEQjwnPLKBRC-j7nt1b7OlZwBEiQAv8lMLK4UtXKg8hZFhiC2_Lv8OySxQwHms_7uQ3-VCVpWA-8aAsRi8P8HAQ

Mechanism:

Lenvatinib works by inhibiting the effectiveness and protein building capabilities of VEGF receptors. These receptors are key in processes like tumor growth and cancer progression, which is why Lenvatinib is important in fighting unwanted angiogenesis and cancerous cell growth.1

Lenvatinib is a receptor tyrosine kinase (RTK) inhibitor that inhibits the kinase activities of vascular endothelial growth factor (VEGF) receptors VEGFR1 (FLT1), VEGFR2 (KDR), and VEGFR3 (FLT4). Lenvatinib also inhibits other RTKs that have been implicated in pathogenic angiogenesis, tumor growth, and cancer progression in addition to their normal cellular functions, including fibroblast growth factor (FGF) receptors FGFR1, 2, 3, and 4; the platelet derived growth factor receptor alpha (PDGFRα), KIT, and RET.

The diagram below shows the 3D model of Lenvatinib:

Sphere | Stick | Line | Cross | Rotate

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1 Mechanism of action. (n.d.). Retrieved July 05, 2017, from http://www.lenvima.com/hcp/RAI-R-differentiated-thyroid-cancer/mechanism-of-action?gclid=Cj0KEQjwnPLKBRC-j7nt1b7OlZwBEiQAv8lMLJd2pLT_NWQ65wcjX99c4vdAFQaN_ZDqyMXuiHU3ntsaAoca8P8HAQ

Side effects:

The following are common side effects associated with Lenvatinib: high blood pressure, joint pain and fatigue, decreased appetite, nausea and weight loss, diarrhea, inflammation of the lining of the mouth, headache, vomiting, excess protein in the urine, swelling and pain in the palms, abdominal pain and changes in voice volume or quality （dysphonia）.1

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1 Important Safety Information. (n.d.). Retrieved July 05, 2017, from http://www.lenvima.com/hcp/RAI-R-differentiated-thyroid-cancer/?gclid=Cj0KEQjwnPLKBRC-j7nt1b7OlZwBEiQAv8lMLK4UtXKg8hZFhiC2_Lv8OySxQwHms_7uQ3-VCVpWA-8aAsRi8P8HAQ

Contraindications:

Women with infants should discontinue breast feeding while on Lenvatinib, as the medication will cause adverse effects on infants.

Lenvatinib can lead to reduced fertility and potency in both men and women.[1]

1 Important Safety Information. (n.d.). Retrieved July 05, 2017, from http://www.lenvima.com/hcp/RAI-R-differentiated-thyroid-cancer/?gclid=Cj0KEQjwnPLKBRC-j7nt1b7OlZwBEiQAv8lMLK4UtXKg8hZFhiC2_Lv8OySxQwHms_7uQ3-VCVpWA-8aAsRi8P8HAQ