

## Cetuximab and Panitumumab

Cetuximab and panitumumab are monoclonal antibodies against the epidermal growth factor receptor (EGFR) on neoplastic cells. These drugs are indicated for colorectal cancer, head/neck cancers, and Menetrier disease. Side effects include elevated LFTs, rash, diarrhea, hypokalemia, and hypomagnesemia.



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### Mechanism

#### Monoclonal Antibodies Against EGFR

[Monocle-wearing Ant-tie-body eating Egg-fried-chains](#)

Cetuximab and panitumumab are monoclonal antibodies (mAbs) that target the epidermal growth factor receptor (EGFR) on cancer cells. By binding to this receptor, cetuximab and panitumumab inhibit cell growth.

### Indications

#### Colorectal Cancer

[Colorectal Tumor-guys](#)

Cetuximab and panitumumab are indicated for stage IV (metastatic) colorectal cancer (CRC). EGFR positivity is seen in 75% of CRCs. By inhibiting EGFR, colon cancer growth can be reduced. KRAS wild type colorectal tumors are especially responsive to EGFR inhibitors.

#### Head and Neck Cancer

[Head and Neck Tumor-guy](#)

EGFR overexpression is found in 90% of squamous cell carcinomas of the head and neck (HNSCC). Cetuximab is used as initial therapy of locally advanced HNSCC in combination with radiation therapy or platinum-based therapy plus 5-fluorouracil. It can be used as monotherapy for recurrent or metastatic HNSCC that has progressed following platinum-based chemotherapy.

#### Ménétrier Disease

[Man-in-tears](#)

Patients with Ménétrier disease are thought to have EGFR overexpression. Anti-EGFR agents like cetuximab have shown effectiveness in treating this disease.

### Side Effects

#### Elevated LFTs

[Up-arrow Liver-enzymes](#)

Elevation of liver enzymes can occur while undergoing cetuximab or panitumumab therapy. This is usually transient, mild and asymptomatic.

However, if the elevation exceeds more than 5 times the upper limit of normal, monitoring and discontinuation should be considered until levels

return to normal or near-normal levels. Liver function tests should be performed monthly if they are found to be elevated.

### **Rash**

#### [Dermatologist examining Rash](#)

Skin rash is reported in 80–95% of patients treated with cetuximab or panitumumab monotherapy. Papulopustular skin rash is the most common and is dose-dependent in severity.

### **Diarrhea**

#### [Toilet](#)

Diarrhea is another most common side effect found in patients using cetuximab or panitumumab. This is thought to be correlated with *Notch* signaling pathway inhibition which transforms proliferative undifferentiated intestinal crypt cells into secretory goblet cells.

### **Hypokalemia**

#### [Hippo-banana](#)

These drugs may also cause significant hypokalemia. The mechanism is not completely understood but renal tubular dysfunction is thought to be the cause.

### **Hypomagnesemia**

#### [Hippo-magnesium-magazine](#)

Hypomagnesemia is another possible side effect. Electrolytes should be monitored for 8 weeks after completion of therapy.