

## Cetuximab (Erbix<sup>®</sup>)

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**Pronounce:** se-TUX-i-mab

**Classification:** Monoclonal Antibody

### About Cetuximab (Erbix<sup>®</sup>)

Monoclonal antibodies are created in a lab to attach to the targets found on specific types of cancer cells. The antibody “calls” the immune system to attack the cell it is attached to, resulting in the immune system killing the cell. These antibodies can work in different ways, including stimulating the immune system to kill the cell, blocking cell growth or other functions necessary for cell growth.

Cetuximab is a man-made version of a naturally occurring human/mouse antibody that inhibits the epidermal growth factor receptor (EGFR). The EGFR is a protein that is abnormally over-expressed in many cancers, and the inhibition of EGFR results in a decrease in tumor cell growth and decreased production of other factors responsible for metastasis (spreading of cancer). This medication treats both head and neck and colorectal cancer. The colorectal cancer needs to test positive for the k-ras wild type. Your cancer cells will be tested for this mutation.

### How to Take Cetuximab

Cetuximab is given through intravenous (IV, into a vein) infusion. The dose is based on your size, and how often you receive the medication depends on which disease you are being treated for and what other treatments you are receiving. Before your first dose, you will be given a pre-medication such as diphenhydramine (Benadryl) to prevent an infusion reaction. Whether or not you receive pre-medications before subsequent doses will be at the discretion of your care team. Your dose may be changed if you have a reaction to the medication.

### Possible Side Effects

There are a number of things you can do to manage the side effects of cetuximab. Talk to your care team about these recommendations. They can help you decide what will work best for you. These are some of the most common or important side effects:

#### Infusion Reaction

Some patients will develop a reaction to the medication. This most commonly occurs with the first dose. Reactions can cause chills, fever, shortness of breath, difficulty breathing, hoarseness, itching, or low blood pressure. Tell your nurse right away if you experience any of these. You will be given medication before the infusion to help prevent this reaction. You will be monitored for at least 1 hour after the completion of your infusion.

#### Heart Problems

Cetuximab can cause heart problems, including cardiac arrest and heart attack. Patients with a prior history of coronary artery disease and/or receiving radiation therapy are at the highest risk. Notify your healthcare team or go to the emergency room immediately if you experience chest pain, shortness of breath, or feel dizzy or faint.

#### Electrolyte Abnormalities

This medication can impact the electrolyte levels in your blood, including magnesium, calcium, and potassium. This can even occur after the completion of treatment. Your healthcare team will monitor your electrolyte levels during treatment and for at least 8 weeks following the completion of treatment.

## Nail and Skin Changes

Cetuximab has some unique nail and skin side effects that you may develop. Patients may develop a rash. While this rash may look like acne, it is not, and should not be treated with acne medications. The rash may appear red, swollen, crusty and dry, and feel sore. You may also develop very dry skin, which may crack, be itchy, or become flaky or scaly. The rash may be the worst during the first few weeks of treatment, but may continue until treatment is stopped. Tips for managing your skin include:

- Use a thick, alcohol-free emollient lotion or cream on your skin at least twice a day, including right after bathing.
- Sun exposure can worsen the rash. Use a sunscreen with an SPF of 30 or higher and wear a hat and sunglasses to protect your head and face from the sun.
- Bathe in cool or lukewarm water and pat your skin dry.
- Use soaps, lotions, and laundry detergents without alcohol, perfumes, or dyes.
- Wear gloves to wash dishes or do housework or gardening.
- Drink plenty of water and try not to scratch or rub your skin.
- Notify your healthcare team if you develop a rash as they may have management suggestions and/or prescribe a topical medication to apply to the rash or an oral medication.

While receiving cetuximab, you may develop an inflammation of the skin around the nail bed/cuticle areas of toes or fingers, which is called paronychia. It can appear red, swollen, or pus-filled. Nails may develop "ridges" or fall off. You may also develop cuts or cracks that look like small paper cuts in the skin on your toes, fingers, or knuckles. These side effects may appear several months after starting treatment but can last for many months after treatment stops.

- Follow the same recommendations for your skin (above).
- Don't bite your nails or cuticles, or cut the cuticles.
- Keep your fingernails and toenails clean and dry.
- You may use nail polish, but do not wear fake nails.
- Notify your doctor or nurse if any nails fall off or if you develop any of these side effects or other skin abnormalities.

## Sun Sensitivity

This medication can make your skin more sensitive to the sun, which can result in severe sunburn or rash. Sun sensitivity can last even after chemotherapy is completed. Limit sun exposure while receiving this medication, and for two months following the last dose. Avoid the sun between 10-2 pm, when it is strongest. Wear sunscreen (at least SPF 15) everyday; wear sunglasses, a hat, and long sleeves/pants to protect your skin and seek out shade whenever possible.

## Fatigue

**Fatigue** is very common during cancer treatment and is an overwhelming feeling of exhaustion that is not usually relieved by rest. While on cancer treatment, and for a period after, you may need to adjust your schedule to manage fatigue. Plan times to rest during the day and conserve energy for more important activities. Exercise can help combat fatigue; a simple daily walk with a friend can help. Talk to your healthcare team for helpful tips on dealing with this side effect.

## Nausea and/or Vomiting

Talk to your oncology care team so they can prescribe medications to help you manage [nausea and vomiting](#). In addition, dietary changes may help. Avoid things that may worsen the symptoms, such as heavy or greasy/fatty, spicy, or acidic foods (lemons, tomatoes, oranges). Try saltines or ginger ale to lessen symptoms.

Call your oncology care team if you are unable to keep fluids down for more than 12 hours or if you feel lightheaded or dizzy at any time.

## Muscle or Joint Pain/Aches and Weakness

Your healthcare provider can recommend medications and other strategies to help relieve pain.

## Important but Less Common Side Effects

- **Hair Changes:** While receiving cetuximab, your eyelashes may grow very fast, become very long, and bother your eyes. Speak to your provider about how to best manage this side effect. The hair on your head may become curly, fine, or brittle. These changes tend to resolve once treatment is stopped.
- **Lung Problems:** Cetuximab can cause interstitial lung disease (ILD), especially in those with pre-existing lung problems. You may have breathing tests (pulmonary function tests) performed periodically. Call your physician right away if you have shortness of breath, cough, wheezing, or difficulty breathing.

## Reproductive Concerns

Exposure of an unborn child to this medication could cause birth defects, so you should not become pregnant or father a child while on this medication. If you do become pregnant, your care team will decide whether or not you should receive the medication. Effective birth control is necessary during treatment and for 2 months after treatment has stopped. Even if your menstrual cycle stops or you believe you are not producing sperm, you could still be fertile and conceive. You should not breastfeed while receiving this medication, and for 2 months after your last treatment.

# Encorafenib (Braftovi®)

**Pronounce:** en-koe-RAF-e-nib

**Classification:** Kinase Inhibitor

## About Encorafenib (Braftovi®)

Encorafenib works by targeting and blocking receptors found on cancer cells called BRAF V600E or V600K. In some cancers, this receptor is mutated, causing cells to grow and divide too fast. By targeting these mutated receptors, this medication can slow or stop tumor growth. These mutations are found by testing a piece of the tumor before starting treatment.

Encorafenib may be used to treat melanoma with a BRAF V600E or V600K mutation. It may also be used to treat colorectal cancer or some types of lung cancer with a BRAF V600E mutation.

Encorafenib is often given with another medication, depending on why you are taking it. For colorectal cancer, encorafenib may be given with a medication called [cetuximab](#). For melanoma and some types of lung cancer, encorafenib may be given with a medication called [binimetinib](#). If encorafenib is given with binimetinib, your care team will check how well your heart pumps blood with an echocardiogram or MUGA scan before and during your treatment. Your liver will also be checked with blood tests called liver function tests.

This article will focus on the side effects of taking encorafenib by itself. If you are taking encorafenib with one of the other medications, please see the article for [binimetinib](#) or [cetuximab](#) for more information.

## How to Take Encorafenib

Encorafenib is taken once a day, by mouth, in a capsule form. It can be taken with or without food. If you miss your dose and it is within 12 hours of your next dose, skip the missed dose and take your next dose as scheduled. If you vomit after taking this medication, do not take an extra dose. Instead, continue with your next dose as scheduled. Consult with your pharmacist or provider if you are having trouble swallowing the medication.

It is important to make sure you are taking the correct amount of medication every time. Before every dose, check that what you are taking matches what you have been prescribed.

The blood levels of this medication can be affected by certain foods and medications, so they should be avoided. These include: grapefruit, grapefruit juice, verapamil, ketoconazole, rifampin, phenytoin, St. John's wort, and modafinil, among others. Be sure to tell your healthcare provider about all medications and supplements you take.

If at some point you stop taking encorafenib you should also stop taking binimetinib or cetuximab. Discuss with your provider if you stop taking any medication.

## Storage and Handling

Store your medication in the original, labeled container at room temperature and in a dry location (unless otherwise directed by your healthcare provider or pharmacist). Do not remove the desiccant from the bottle as this protects moisture from affecting the medication. This medication should not be stored in a pillbox. Keep containers out of reach of children and pets.

If a caregiver prepares your dose for you, they should consider wearing gloves or pouring the pills directly from their container into the cap, a small cup, or directly into your hand. They should avoid touching the pills. They should always wash their hands before and after giving you the medication. Pregnant or nursing women should not prepare the dose for you. Ask your oncology team where to return any unused medication for disposal. Do not flush it down the toilet or throw it in the trash.

## Where do I get this medication?

Encorafenib is available through select specialty pharmacies. Your oncology team will work with your prescription drug plan to identify an in-network specialty pharmacy for distribution of this medication and shipment directly to your home.

## Insurance Information

This medication may be covered under your prescription drug plan. Patient assistance may be available to qualifying individuals depending upon prescription drug coverage. Co-pay cards, which reduce the patient co-pay responsibility for eligible commercially (non-government sponsored) insured patients, may also be available. Your care team can help you find these resources, if they are available.

## Possible Side Effects of Encorafenib

There are a number of things you can do to manage the side effects of encorafenib. Talk to your care team about these recommendations. They can help you decide what will work best for you. These are some of the most common or important side effects:

### Skin Reactions

This medication can cause skin issues such as hyperkeratosis (thickening of the skin), dry skin, itching and rash. Use an alcohol free moisturizer on your skin and lips; avoid moisturizers with perfumes or scents. Your oncology care team can recommend a topical medication if itching is bothersome. If your skin does crack or bleed, be sure to keep the area clean to avoid infection. Your care providers will frequently be checking your skin for any changes. It is important to notify your providers of any new or worsening changes to your skin.

## Loss or Thinning of Scalp and Body Hair (Alopecia)

Your hair may become [thin, brittle, or may fall out](#). This typically begins two to three weeks after treatment starts. This hair loss can be all body hair, including pubic, underarm, legs/arms, eyelashes, and nose hairs. The use of scarves, wigs, hats and hairpieces may help. Hair generally starts to regrow soon after treatment is completed. Remember your hair helps keep you warm in cold weather, so a hat is particularly important in cold weather or to protect you from the sun.

## Hand Foot Syndrome

[Hand foot syndrome](#) (HFS) is a skin reaction that appears on the palms of the hands and/or the soles of the feet, as a result of certain chemotherapy agents being absorbed by the skin cells. HFS can begin as a mild tingling, numbness, pins-and-needles feeling, redness or pain or swelling of the hands and/or feet. This can then progress to painful swelling, blistering or peeling skin that can interfere with your ability to do normal activities. Be sure to let your oncology team know right away if you notice these symptoms, as they may need to adjust the chemotherapy dose or take a break to allow the skin to heal. Some tips to help prevent HFS include:

- Keep hands and feet clean and dry.
- Avoid tight shoes or socks.
- Avoid activities that put pressure on the palms or soles for 1 week after treatment.
- Apply an alcohol-free moisturizer liberally and often. (Avoid moisturizers with perfumes or scents)
- Avoid very hot water for baths and showers.

## Fatigue

[Fatigue](#) is very common during cancer treatment and is an overwhelming feeling of exhaustion that is not usually relieved by rest. While on cancer treatment, and for a period after, you may need to adjust your schedule to manage fatigue. Plan times to rest during the day and conserve energy for more important activities. Exercise can help combat fatigue; a simple daily walk with a friend can help. Talk to your healthcare team for helpful tips on dealing with this side effect.

## Muscle or Joint Pain/Aches and Headache

Your healthcare provider can recommend medications and other strategies to help relieve pain and to manage any swelling of joints.

## Important but Less Common Side Effects

- **Secondary Malignancies:** There is a risk of developing a new primary skin cancer due to treatment with this medication, which can occur during and/or many years after treatment. You will have frequent skin checks and you should report any new changes in your skin to your provider.
- **Bleeding:** This medication can cause abnormal, serious bleeding. You should contact your provider if you cough up blood or blood clots, if you vomit and it looks like coffee grounds, you have bleeding with bowel movements, or red or black, tar-like stools.
- **Eye Problems:** If you have any change in vision such as blurred vision, loss of vision, see colored dots or halos, have eye pain, swelling or redness, you should contact your care provider.
- **Cardiomyopathy:** This is when your heart has a hard time carrying blood to your body. Your ejection fraction, which measures how much blood your heart is able to pump with each beat, may be lower than normal.
- **QT Prolongation:** This medication can cause slow or abnormal heartbeats or an abnormal heart rhythm called QT prolongation. Notify your oncology care team right away if you feel abnormal heartbeats or if you feel dizzy or faint.

## Reproductive Concerns

This medication may affect the reproductive system in men, resulting in sperm production becoming irregular or stopping permanently. You may want to consider sperm banking if you may wish to have a child in the future. Discuss these options with your oncology team.

Exposure of an unborn child to this medication could cause birth defects, so you should not become pregnant or father a child while on this medication. Effective non-hormonal birth control is necessary during treatment and for at least 2 weeks after treatment. This medication makes hormonal birth control methods ineffective, such as birth control pills, patches, implants, shots and IUDs. Even if your menstrual cycle stops or you believe you are not producing sperm, you could still be fertile and conceive. You should not breastfeed while taking this medication and for 2 weeks after stopping treatment.

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