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Cancer Center

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[History](#)

[Equality, diversity & inclusion](#)

[Annual report](#)

[Give to MSK](#)

Oleandrin is an extract from a plant that is considered toxic, and studies in humans are lacking.

Oleandrin is an extract from the plant, *Nerium oleander*. This shrub is native to northern Africa, the eastern Mediterranean basin, and Southeast Asia and although it looks appealing, is considered toxic. It contains substances that are similar to the active chemical found in the heart medication, digoxin. Lab studies suggest that some products being tested may suppress cancer cell growth or make them more sensitive to treatment. However, it is unclear whether these effects can occur in the human body.

## What are the potential uses and benefits?

- To treat cancer

Lab studies show some anticancer activity in cancer cell lines, but clinical trials to evaluate the anticancer activities of oleandrin in humans are lacking.

Scientific evidence is lacking to support the following claims:

- To treat congestive heart failure
- To treat hepatitis C
- To treat AIDS
- To treat COVID-19

## What are the side effects?

- Nausea, vomiting

- Diarrhea
- Fatigue
- Itching
- Pain at injection site
- Tumor pain
- Breast pain
- Abnormally high white blood cell counts
- Abnormally fast and irregular heart rate

#### Case Reports

- Death of an adult diabetic man: Due to consumption of oleander leaves.
- Death suspected from daily intramuscular injections: In a 43-year-old cancer patient, who used intramuscular injections of *Nerium oleander* extract for 2 months.
- Accidental poisoning: In a woman who attempted to self-medicate for thyroid disease.

## What else do I need to know?

#### Patient Warnings:

- The raw plant from which Anvirzel™ is extracted, *Nerium oleander*, is highly toxic. Consumption of this botanical may be fatal.
- Onset of toxicity occurs several hours after consumption and includes vomiting, abdominal pain, bluish skin discoloration, low blood pressure, low body temperature, dizziness, respiratory paralysis, and death.

#### Do Not Take if:

These products are not approved treatments in the United States and should not be used outside of clinical trials.

- You are taking digoxin: These products contain cardiac glycosides, the same active chemical in digoxin, so the two medications may have additive effects, causing toxicity.
- You are taking P-glycoprotein (P-gp) substrate drugs: Oleander leaf extract may increase the blood levels of these drugs.
- You have high blood levels of calcium
- You have low blood levels of potassium
- You have an abnormally slow or fast heart rate
- You have heart failure: These products contain cardiac glycosides, the same active chemical in digoxin, and are therefore contraindicated in people with these conditions.

#### Special Point:

A few products are being studied, but have not been approved for use. Until larger well-designed studies are published that demonstrate these products are effective and safe, they should not be used outside of clinical trials.

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always

For more resources, visit [www.mskcc.org/pe](http://www.mskcc.org/pe) to search our virtual library.

Oleandrin - Last updated on February 24, 2023

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