

RABBIT FISH



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BREAKING NEWS

IN May 2022:

The Directorate of Health Affairs in Port Said Governorate announced that an entire family of 5 people had been poisoned after eating a meal of poisonous rabbit fish, which sparked concern and panic among citizens who love to eat fish, wondering about the whereabouts of that fish, and what it looks like?

Cause of nomenclature

The name of the fish is **rabbit fishes** because of its teeth which look like rabbit teeth, and it is also known as the **gnat** because of its sharp, pointed teeth, and the puffer because it blows when it feels afraid. In Japan it is known as **FUGU**.

According to the FAO, rabbit fish include 28 species belonging to the genus Siganus, and are distributed across the Indian and Pacific Oceans from the Red Sea and the Gulf to Polynesia, and from Japan to South Australia.

Feeding & Activity

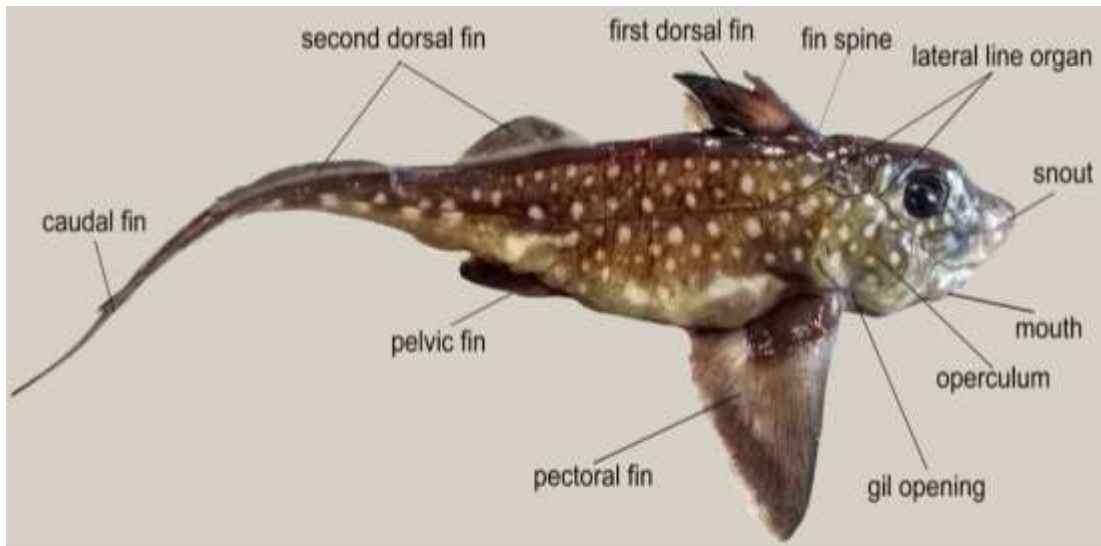
It is a fish with a diverse diet (**Omnivorous**), some of which feed on **grasses** and **toxic algae**, some of which feed on **small fish**, and some of which feed on **waste**. **Active during the day, and sleep at night**

Classification:

Kingdom:	Animalia
Phylum:	Chordata
Class:	Actinopterygii
Order:	Perciformes
Suborder:	Percoidei
Superfamily:	Siganoidea
Family:	Siganidae Richardson, 1837 ^[2]
Genus:	<i>Siganus</i> Fabricius, 1775 ^[1]

External features of a rabbit fish

The rabbit fish is known for its characteristically large head and small, tapering body. With large eyes, nostrils, and tooth plates, the head gives them a rabbit-like appearance, hence the nickname “Rabbit fish”. They can grow to 1.5 metres (5 ft) and live for up to 30 years



Poison glands in rabbit fish

- The rabbit fish contains highly toxic glands, and its poison (**tetrodotoxin**) is concentrated under its skin and in the fish’s head and entrails. Its liver is also very toxic. Eating this fish may cause death within six to eight hours
- Toxic substances also accumulate in the fish’s teeth due to the decomposition of its food, which includes a type of toxic green algae.
- One rabbit fish is enough to kill several people

Tetrodotoxin

- Tetrodotoxin is a potent marine neurotoxin, found in marine plants and algae that fish eat.
- produced in the fish by a special bacteria called **alteromonus spec.**
- found in the skin and viscera (ovaries, liver, stomach, and intestines), and the poison is not found in the meat of these fish.
- Common examples of fish that contain tetrodotoxin include:

Blowfish or puffer fish - Porcupine fish - Rabbit fish.

Mechanism of action of toxin (tetrodotoxin) in the body

- When a person eats any type of fish that contains tetrodotoxin, especially rabbit fish, the toxin travels to the blood vessels and the toxin prevents voltage-gated sodium channels from contracting, and prevents cell membranes from polarizing.
- This in turn prevents nerve and muscle cells from working
- Tetrodotoxin remains active even at cooking temperature and is therefore likely to remain in fish tissues after food preparation (e.g. cooking and drying).

What is the dose that if a person ingests this poison, it will lead to a deterioration in his health?

- The lethal dose of tetrodotoxin is estimated to be approximately 1 to 2 mg, and the minimum dose needed to cause symptoms is estimated to be 0.2 mg.

Symptoms of Poisoning

Symptoms of poisoning include:

- **abdominal pain, nausea, vomiting, diarrhea, weakness, muscle paralysis, low blood pressure, low heart rate, body numbness, shortness of breath**

How do I treat rabbit fish poisoning?

There is no known antidote to the venom.

- The mainstay of treatment is respiratory support and continued observation until tetrodotoxin is excreted in the urine.
- Go to the nearest hospital to perform gastric lavage if the patient comes within 60 minutes of eating rabbit fish.
- Dialysis may be beneficial, especially in patients with kidney disease.
- Monoclonal antibodies against tetrodotoxin (anti-tetrodotoxin) are available, but no efficacy studies have been published.
- Healthcare professionals use neostigmine therapy to treat acute respiratory failure caused by tetrodotoxin poisoning.
- Patients should be observed in the intensive care unit (ICU) for 24 hours because some patients experience delayed onset of symptoms of up to 20 hours.

Advices for consumers to protect against rabbit fish poisoning

- All food items available for sale in the market must be suitable for human consumption.
- Trade should pay special attention to the import and sale of fish and fishery products to ensure the safety of citizens.
- Consumers are advised to avoid purchasing pufferfish, porcupine fish, rabbitfish and unknown fish to protect against rabbitfish poisoning.

Interesting facts about eating this fish in Japan.

- Inside a restaurant specializing in cooking poisonous fish, chefs and workers must have official certificates and approvals for their skills.

Chefs license

In Japan, a rabbit fish chef undergoes a difficult job for five years, then undergoes three more exams to obtain a license: a written exam, then a practical exam during which he must clean the fish in twenty minutes, and then an exam during which the chef must recognize the types of rabbit fish. all.

If a chef passes these exams after five years of training, the government grants him a license to cook rabbitfish



The state requires him to place the toxic entrails in a designated, tightly closed waste bin to be chemically disposed of.

Three special knives are used to prepare rabbit fish, one for the skin, one for the bones, and one for the meat.

Of the 38 species of rabbitfish along the Japanese coast, only 22 are approved for consumption, and the law also specifies which parts of the fish can be consumed. “After all, the poison cannot be found in the same place in every species of rabbitfish.”

Examples of rabbitfish



Tetraodontidae

سمكة الارنب المنتفخة



Siganus rivulatus

سمكة الارنب ذات القدم الرخامية



Siganus vulpinus

سمكة الارنب ذات الوجه الثعلب



Siganus canaliculatus

سمكة الارنب ذات البقع البيضاء



Siganus javus

سمكة الارنب المخططة



Siganus Gutatus

سمكة الارنب ذات البقع البرتقالية



Siganus fuscescens

سمكة الارنب السوداء



Siganus Gutatus