

Marine Medicine and Human Health

Marine Biology · Answer Key · 12 Questions

1. What substance found in the blue blood of horseshoe crabs is essential for testing the sterility of medical vaccines?

- A) Hemoglobin
- B) Limulus Amoebocyte Lysate**
- C) Squalene
- D) Chitosan

2. Which marine-derived fatty acid is scientifically proven to reduce high triglyceride levels in human cardiovascular health?

- A) Oleic acid
- B) Palmitic acid
- C) Omega-3**
- D) Lauric acid

3. The drug Ziconotide, used for treating severe chronic pain, is a synthetic version of a toxin found in which marine animal?

- A) Box jellyfish
- B) Cone snail**
- C) Pufferfish
- D) Blue-ringed octopus

4. Which protein, originally isolated from the jellyfish *Aequorea victoria*, is used in medical research to track the movement of cancer cells?

- A) Collagen
- B) Keratin
- C) Green Fluorescent Protein**
- D) Hemocyanin

5. Cytarabine, a chemotherapy medication used to treat leukemia, was originally developed from compounds found in which marine organism?

- A) Sponges**
- B) Starfish
- C) Sea cucumbers
- D) Sea anemones

6. Which compound found in shark liver oil is commonly used as an adjuvant in vaccines to enhance the human immune response?

- A) Calcitriol
- B) Squalene**
- C) Tocopherol
- D) Retinol

7. Certain species of coral are used in surgical procedures as a substitute for what human tissue due to their similar porous structure?

- A) Skin
- B) Nerves
- C) Bone**
- D) Cartilage

8. Which essential mineral, found in high concentrations in seaweed, is critical for the production of thyroid hormones in humans?

- A) Iron
- B) Iodine**
- C) Zinc
- D) Magnesium

9. Chitosan, used in medical bandages to accelerate blood clotting and wound healing, is derived from which part of marine life?

- A) Fish scales
- B) Crustacean shells**
- C) Shark skin
- D) Whale blubber

10. Tetrodotoxin, a potent neurotoxin found in pufferfish, works on the human nervous system by blocking which specific pathways?

- A) Calcium channels
- B) Potassium pumps
- C) Sodium channels**
- D) Neurotransmitter receptors

11. Ciguatera poisoning in humans is caused by eating predatory reef fish that have accumulated toxins from which microscopic organism?

- A) Diatoms
- B) Dinoflagellates**
- C) Cyanobacteria
- D) Radiolarians

12. Which heavy metal, often found in large predatory fish like Swordfish, is a potent neurotoxin that can cross the human blood-brain barrier?

A) Cadmium

B) Lead

C) Arsenic

D) Methylmercury