



Discover How This Drug Replicates High Altitude Health Benefits

Description

Scientists are making a new drug that acts like thin "mountain air." This drug can help people breathe better.

The drug is called HypoxyStat. It helped mice live longer by reducing too much oxygen in their brains. A team from Gladstone Institutes, the University of California San Francisco, and Maze Therapeutics worked on this drug.

In tests, HypoxyStat helped sick mice recover, even when they were very ill. It improved their movement and strength.

Leigh syndrome is a rare disease that makes it hard for cells to use oxygen. This can cause brain damage and could lead to early death. Most children with this disease do not live long.

HypoxyStat helps red blood cells carry oxygen better. This means there is less oxygen in the tissues but more in the blood. This is similar to how people feel at high altitudes.

The researchers are excited about this drug. They hope it can help people with serious diseases in the future.

The study was published in the journal *Cell*.

Vocabulary List:

1. **HypoxyStat** /haɪ'pɒk.si.stæt/ (noun): A new drug that mimics high altitude conditions to aid breathing.
2. **Sick** /sɪk/ (adjective): Having a disease or illness that affects health and well-being.
3. **Recovery** /rɪ'kʌv.ər.i/ (noun): The process of regaining health or strength after illness or injury.
4. **Oxygen** /'ɒk.sɪ.dʒən/ (noun): A chemical element essential for respiration in living organisms.
5. **Tissues** /'tɪʃ.u:z/ (noun): Groups of cells that work together to perform a specific function in the body.
6. **Researchers** /rɪ'sɜːr.tʃərz/ (noun): Individuals who conduct studies or investigations to discover new information.

Comprehension Questions

Multiple Choice



1. What is the name of the new drug being developed by scientists to help people breathe better?
Option: AirHypo
Option: Hypoxygen
Option: HypoxyStat
Option: OxyBreathe
2. How did HypoxyStat help mice in the tests conducted by the research team?
Option: Improved their vision
Option: Reduced oxygen in their brains
Option: Increased their body weight
Option: Strengthened their bones
3. What disease is mentioned in the text that makes it hard for cells to use oxygen?
Option: Hypertension
Option: Leigh syndrome
Option: Malaria
Option: Diabetes
4. What effect does HypoxyStat have on red blood cells according to the information provided?
Option: Makes them produce more oxygen
Option: Helps them carry oxygen better
Option: Reduces their ability to carry oxygen
Option: Causes them to release carbon dioxide
5. Where was the study on the new drug published?
Option: Science
Option: Nature
Option: Cell
Option: Journal of Medicine
6. What is the similarity mentioned in the text between the effects of HypoxyStat and high altitudes?
Option: Both increase oxygen in tissues
Option: Both reduce oxygen in tissues
Option: Both have no impact on oxygen levels
Option: Both increase carbon dioxide levels

True-False



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7. HypoxyStat is proven to help mice live longer by increasing oxygen in their brains.
 8. Leigh syndrome is a common disease that affects a large portion of the population.
 9. The researchers are not hopeful about the potential of HypoxyStat in treating serious diseases.
 10. HypoxyStat is the result of collaboration between teams from various organizations including Gladstone Institutes.
 11. Most children with Leigh syndrome live a long and healthy life.
 12. The primary goal of HypoxyStat is to improve strength and movement in sick individuals.

Gap-Fill

13. HypoxyStat helped sick mice recover, even when they were very ill. It improved their _____ and _____.
14. HypoxyStat helps red blood cells carry oxygen better, resulting in less oxygen in the tissues but more in the _____.
15. The team from Gladstone Institutes, the University of California San Francisco, and Maze Therapeutics collaborated on the development of HypoxyStat to address the challenges of _____ syndrome.
16. Scientists are excited about the potential of HypoxyStat to help people with serious diseases in the _____.
17. The study on HypoxyStat was published in the journal _____.
18. HypoxyStat reduces oxygen in tissues similar to how people feel at high _____.

Answer

Multiple Choice: 1. HypoxyStat 2. Reduced oxygen in their brains 3. Leigh syndrome 4. Helps them carry oxygen better



5. Cell 6. Both reduce oxygen in tissues

True-False: 7. False 8. False 9. False 10. True 11. False 12. True

Gap-Fill: 13. movement, strength 14. blood 15. Leigh 16. future 17. Cell 18. altitudes

Vocabulary quizzes

Multiple Choice (Select the Correct answer for each question.)

1. What are known to be the most resilient animals on Earth?

Option: Tardigrades

Option: Radiation

Option: DNA

Option: Hormones

2. What drives animals to perform certain behaviors without prior experience?

Option: Behavior

Option: Automatic

Option: Instinct

Option: Responsive

3. What can lead to harmful effects when one is in contact with chemicals or radiation?

Option: Exposure

Option: Preference

Option: Leak

Option: Tumor

4. Which field of physics deals with the behavior of subatomic particles?

Option: Mechanics

Option: Quantum

Option: Chemicals

Option: Research

5. What state is characterized by illness or poor health?

Option: Response

Option: Recovery

Option: Oxygen

Option: Sick

6. Which term describes items designed to be thrown away after use?

Option: Hormones

Option: Disposable



Option: Microwaving

Option: DNA

7. What system regulates oxygen levels in tissues to maintain homeostasis?

Option: Tumor

Option: HypoxyStat

Option: Chemicals

Option: Messenger

8. What activity involves the systematic investigation to discover new knowledge?

Option: Tissues

Option: Research

Option: Expand

Option: Messenger

9. What do certain mechanisms in the body do to ensure the safety of cells?

Option: Protect

Option: Expand

Option: Container

Option: Chemicals

10. What term describes the ability to react quickly and positively to something?

Option: Sick

Option: Responsive

Option: Recovery

Option: Radiation

Gap-Fill (Fill in the blanks with the correct word from the vocabulary list.)

11. The process of breathing is mostly controlled by the _____ nervous system.

12. A _____ is an abnormal growth of cells that serves no purpose.

13. Humans need _____ to survive as it is vital for cellular respiration.

14. The study of how _____ react with each other is important in chemistry.

15. Hormones act as _____ molecules in the body to signal various responses.

16. Cells _____ in size as they absorb nutrients and grow.

17. The cell membrane acts as a _____ holding the cell together and keeping its



contents within.

18. A _____ in the blood-brain barrier can have serious consequences.

19. Animals may show a _____ for certain food types over others.

20. Excessive sun exposure can be _____ to the skin.

Matching Sentences (Match each definition to the correct word from the vocabulary list.)

21. Genetic information is stored in molecules within the cell.
22. The way an individual acts or conducts oneself is termed .
23. Activities controlled by the brain without awareness are considered .
24. The group of scientists conducting a study are called .
25. When an individual is unwell or diseased they are said to be .
26. The period of returning to a normal state of health after an illness is known as .
27. The process of cooking or heating food rapidly using a microwave oven is called .
28. Being reactive or quick to respond describes a individual.
29. Substances with a specific chemical composition are termed .
30. Having a greater liking for one thing over another is known as a .

Answer

Multiple Choice: 1. Tardigrades 2. Instinct 3. Exposure 4. Quantum 5. Sick 6. Disposable 7. HypoxyStat 8. Research 9. Protect 10. Responsive

Gap-Fill: 11. Automatic 12. Tumor 13. Oxygen 14. Chemicals 15. Messenger 16. Expand 17. Container 18. Leak 19. Preference 20. Harmful

Matching sentence: 1. DNA 2. Behavior 3. Unconscious 4. Researchers 5. Sick 6. Recovery 7. Microwaving 8. Responsive 9. Chemicals 10. Preference

CATEGORY

1. Health - LEVEL1



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