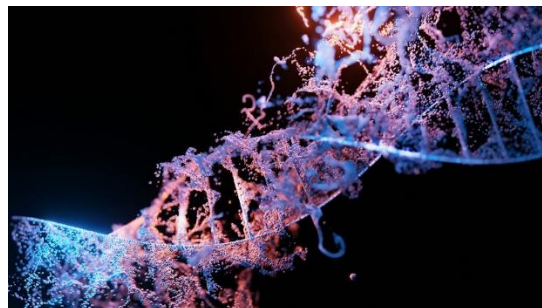


IELTS – Reading - True, False, Not Given

CRISPR: A Revolutionary Tool in Genetic Engineering

CRISPR, or Clustered Regularly Interspaced Short Palindromic Repeats, represents one of the most significant advancements in genetic engineering. This technology has revolutionized the field of genomics, providing scientists with unprecedented precision and efficiency in editing DNA. Developed from a naturally occurring genome editing system in bacteria, CRISPR allows for the targeted alteration of specific sequences within the genetic material of organisms, ranging from bacteria to human cells.



The CRISPR system was first discovered in bacteria, where it functions as an immune mechanism. Bacteria use CRISPR to capture snippets of DNA from invading viruses, which they then use to recognize and defend against future viral attacks. This natural defense mechanism laid the foundation for developing CRISPR as a tool for cutting and editing DNA at specific locations.

The applications of CRISPR are vast and varied. In medicine, it offers the potential to correct genetic defects and treat hereditary diseases. In agriculture, CRISPR can be used to enhance crop resistance to pests and diseases, improve nutritional qualities, and increase yield. In research, it provides a powerful tool for studying genes and understanding their functions.

Despite its potential, CRISPR technology also raises ethical and safety concerns, particularly regarding human genome editing. The possibility of altering the human germline (genes that are passed on to future generations) presents profound ethical implications. There is an ongoing debate about the regulation of CRISPR technology, especially concerning its use in humans, to ensure it is applied safely and responsibly.

As CRISPR technology continues to evolve, it holds the promise of significant breakthroughs in multiple fields. It represents a new frontier in genetic engineering, offering both solutions to longstanding problems and posing new challenges and ethical considerations for the scientific community.

Do the following statements agree with the information in the text?

TRUE	<i>if the statement agrees with the information</i>
FALSE	<i>if the statement contradicts the information</i>
NOT GIVEN	<i>if there is no information on this</i>

1. CRISPR was first developed as an artificial tool for genetic engineering in humans.
2. The CRISPR system originated as a natural immune response in bacteria.
3. CRISPR technology can potentially be used to improve crop qualities.
4. There are few worries associated with the use of CRISPR technology.
5. It is possible to modify genes for upcoming generations using CRISPR technology.
6. The scientific community all agree about the regulation of CRISPR technology.

ANSWER KEY

1. FALSE - The text states that CRISPR was developed from a naturally occurring genome editing system in bacteria and does not specifically mention that it was initially developed for use in human cells.
2. TRUE - The text clearly mentions that the CRISPR system was first discovered in bacteria where it functions as an immune mechanism against viruses, indicating that it originated as a natural immune response in bacteria.
3. TRUE - The text mentions that in agriculture, CRISPR can be used to enhance crop resistance to pests and diseases, improve nutritional qualities, and increase yield, which supports the statement.
4. FALSE - The text explicitly states that CRISPR technology raises ethical and safety concerns, particularly regarding human genome editing, contradicting the statement that there are few worries associated with its use.
5. TRUE - The text discusses the ethical implications of altering the human germline with CRISPR technology, which involves editing genes passed on to future generations.
6. NOT GIVEN - While the text mentions an ongoing debate about the regulation of CRISPR technology, it does not provide information regarding the agreement or disagreement within the scientific community on its regulation.