

Chapter – 10 | Biotechnology and Its Applications

QUIZ
PART-04

1. Transgenic animals are those animals whose DNA has been modified by:

- A. Removal of all genes
- B. Insertion of an extra foreign gene
- C. Changing body structure
- D. Increasing chromosome number only (B)

Explanation : Transgenic animals are created by inserting an extra (foreign) gene into their DNA, which can express a desired trait.

2. Which of the following is a transgenic animal?

- A. Normal mouse
- B. Genetically modified mouse containing a foreign gene
- C. Natural cow
- D. Wild rabbit (B)

Explanation : A transgenic animal contains modified DNA due to the insertion of a foreign gene.

3. Currently, more than what percentage of existing transgenic animals are mice?

- A. 50%
- B. 75%
- C. 95%
- D. 100% (C)

Explanation : More than 95% of existing transgenic animals are mice.

4. Which of the following is NOT a benefit of transgenic animals?

- A. Study of normal bodily functions
- B. Study of diseases and gene therapy
- C. Vaccine safety testing
- D. Increasing environmental pollution (D)

Explanation : Transgenic animals are useful for studying normal functions, diseases, biological products, vaccine safety and chemical safety testing.

5. Transgenic animals help in studying:

- A. How genes are regulated
- B. Only animal colour
- C. Only body weight
- D. Only feeding habits (A)

Explanation : Transgenic animals are specifically designed to study gene regulation, body development and effects on normal functions.

6. Transgenic models are available for the study of which human disease?

- A. Cancer
- B. Malaria only
- C. Common cold only
- D. Typhoid only (A)

Explanation : Transgenic models are available for diseases like cancer, cystic fibrosis, rheumatoid arthritis and Alzheimer's disease.

7. The first transgenic cow "Rosie" was created in:

- A. 1983
- B. 1990
- C. 1997
- D. 2005 (C)

Explanation : In 1997, the first transgenic cow named Rosie was created, producing milk containing human proteins.

8. Rosie's milk contained the desired human protein at a concentration of:

- A. 1.4 grams per litre
- B. 2.4 grams per litre
- C. 5.4 grams per litre
- D. 10 grams per litre (B)

Explanation : Rosie's milk contained the desired protein at a concentration of 2.4 grams per litre.

9. Genetically modified mice are developed for:

- A. Increasing milk production
- B. Vaccine safety testing
- C. Seed production
- D. Food preservation (B)

Explanation : Transgenic mice are developed to test the safety of vaccines before they are used on humans.

10. Transgenic animals are used for chemical safety testing because:

- A. They cannot respond to chemicals
- B. Some genes make them hypersensitive to toxic substances
- C. They do not contain genes
- D. They cannot be genetically modified (B)

Explanation : Some genes in transgenic animals make them hypersensitive to toxic substances, helping in toxicity testing.