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Answers

Surely it's snot: the essential role of mucus in host defences

Answers to practice exam questions on pp. 2–6

Martin Rowland

- 1 (Antigen-presenting cell) phagocytises / engulfs non-self / foreign molecules / cells.
(Ingested molecules / cells) digested by lysozymes / proteases (within antigen-presenting cell).
(Breakdown products) displayed on cell-surface membrane (of antigen-presenting cell).
- 2 Any five from the following:
 - On day 6, the frequency of goblet cells in both groups of mice was higher than on day 0.
 - As shown by the error bars, this difference in the frequency of goblet cells is (likely to be) significant.
 - After 10 days / at day 10 / at day 14, the frequency of goblet cells was not significantly different from that on day 0 in either group.
 - At day 14, the knock-out mice had a burden of ~ 180 worms, whereas the wild-type mice had a burden of 0 worms.
 - *IL-13* (protein) is essential for increasing the number of goblet cells during worm infection.
 - Without *IL-13* (protein), worms cannot be expelled / infection persists (due to a lack of goblet cell responses).
- 3 Convenient / simple / easy way to find the function of a single gene / of *IL-13* gene.
(Inactivation / deletion of gene) will / might cause harm to mice.
But (mean values show) some mice were killed at intervals (to get results) / all mice were killed by the end of the experiment.

Nutrition in a changing world: could plant-based eating be the solution?

Answers to practice exam questions on pp. 22–26

Martin Rowland

1 Any four from the following:

- Not all food is eaten (by herbivore) / some food is spoiled (by herbivore)
- Not all food that is eaten is digested / energy lost in faeces
- Lost as heat by herbivore
- Lost during ATP-driven metabolism / anabolism / catabolism / active transport / muscle contraction of herbivore
- Lost to metabolism / growth of bacteria in rumen / microbiota of herbivore.

2 12.44 / 12.49 (times greater) = 2 marks

If answer incorrect, allow one mark for any one of:

Between 12.43(7691) and 12.487(179) – incorrect rounding

OR

4.97 x 0.98

OR

0.44 x 0.89