

1-5 ADDDC

6-10 AACCC

11-15 AACDB

16-20 ADACD

21-25 DBBBC

26-30 ABAAB

31-35 CCDCB

36-40 DADBB

41-45 CBABB

46-50 CBDDB

51-55 DCBCA

56-60 DCBDC

No.
Date

Q₁:

(a): Describe: The ratio should be 1:2:1

(b): i: Identify: dependent variable should be the average mass
ii: Justify: Because the wild type mice can provide the ^{relative} unaffected numerical value of average mass
iii: Justify: Because this can avoid differences caused by age
iv: Deviate: The loss of Hba causes less change in mass compared than less Hbb

(c): i: Deviate: It causes a significant increase in Tail defects and an appearance of Head defects.
ii: Calculate: $20 \times 10\% = 20$

(d): i: State: phenotype has no effect on (Tail & Head) defects.
ii: Support: From Graph A we can see that there is a significant decrease from Hbb^{+/+} compared to Hbb^{+/+} and Hbb^{+/+} compared to Hbb^{+/+}. thus Hba^{+/+} can not restore the loss caused by deletion of Hbb.

Q₂:

(a): Describe: Nitrogen base, Pentose sugar and phosphate group

(b): i: Construct
ii: Determine: sum and (or) (or) treatment

(c): Identify: Between 10 μ m and 25 μ m treatment

Percent of maximum RRR activity

Concentration of N5H	Percent of maximum RRR activity	Genotype
3	100	Hba ^{+/+}
5	100	Hbb ^{+/+}
10	100	Hba ^{+/+}
25	100	Hbb ^{+/+}
50	50	Hba ^{+/+}
100	25	Hbb ^{+/+}

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- (d) i: Predict: This causes the amount of NSAH doubled.
ii: Justify: Because those individual produce twice as much substrate for hRR as others do, thus doubled amount of NSAH is needed to be effective.
iii: Explain: Because irreversible inhibitor of hRR cause permanent decrease of hRR, but reversible inhibitor of hRR like NSAH cause ephemeral inhibit of hRR, which can be recover naturally later thus NSAH maybe ~~more~~ ^{less} harmful than F.C.

Q₂ (dim)*

- (a): Describe: It's composed by phospholipid bilayer.
(b): Justify: Because that of wild-type cell protein compromise (unaffected) nature data of it.
(c): Predict: Green fluorescence will decrease significantly while red fluorescence will have a significant increase.
(d): Support: Because the inner face of phospholipid bilayer show hydrophobicity, thus hydrophobic protein will embedded within it, rather than remaining on the hydrophilic surface.

Q₄

- (a): Describe: There's a positive relation between the density and the competition effect on it.
(b): Explain: It's behavior cause the number of white-bark pine tree to increase unnaturally within the population.
(c): Predict: It causes decrease of nutcrackers in the population.
(d): Justify: Because those beetles causes dramatically decrease of pine tree population and they form mutualistic symbiosis with nutcrackers (pine tree).

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Q₅:

- (a): Describe: The mutant allele is suitable in the current environment (nature selected allele).
(b): Because they both evolved, characteristic 4 and 5 (with different ^{environment} in different environment).
(c): Clade B, Clade C. (d): Explain: Because from the graph we can know that they turn to tree Clades (A, B and C) with each clade has its own type (kind) of birds, but have difference between two clades, thus they may be response to divergent evolution in different evolution.

Q₆:

- (a): Describe: It causes Amount of Gf pre-mRNA ~~decrease~~ ^{to decrease to increase} ~~miRNA-466~~.
(b): Describe: It causes the amount of Gf pre-mRNA lower than that of control cells' group.
(c): Support: Because from the graph we can know that in the lacking of miRNA-466, the amount of Gf pre-mRNA is significantly lower than that of control cells, thus 466 ~~can~~ ^{can promote the transcription of Gf}.
(d): Explain: Because ~~genetic~~ ^{genetic} selection and differentiation lead to difference of cell structure and function.