



Exploring Epigenetics

Student sheets: The Scientific Investigator

In this experiment, which of the environmental variables altered the Agouti gene sequence?

- Diet
- Water bottle material
- Placement of cage in light / dark
- None of the above

In this experiment, which of the environmental variables altered the Agouti epigenetic modifications? (select all that apply)

- Diet
- Water bottle material
- Placement of cage in light / dark
- None of the above

What was the phenotype of the offspring when the mother was fed on green vegetables, used a glass water bottle and was kept by the window?

- Brown and overweight
- Brown and healthy weight
- Yellow and overweight
- Yellow and healthy weight

What was the phenotype of the offspring when the mother was fed on pellets, used a plastic water bottle (containing bisphenol A) and was kept in the dark?

- Brown and overweight
- Brown and healthy weight
- Yellow and overweight
- Yellow and healthy weight

How did the epigenetic modifications in brown mice of healthy weight affect their expression of the Agouti gene?

- Most of DNA methylated, reducing Agouti gene expression
- Most of DNA methylated, increasing Agouti gene expression
- Little DNA methylation, reducing Agouti gene expression
- Little DNA methylation, increasing Agouti gene expression

How did the epigenetic modifications in yellow, overweight mice affect their expression of the Agouti gene?

- Most of DNA methylated, reducing Agouti gene expression
- Most of DNA methylated, increasing Agouti gene expression
- Little DNA methylation, reducing Agouti gene expression
- Little DNA methylation, increasing Agouti gene expression