Edexcel Biology International A-level
CP 16 - Rate of respiration and RQ

Flashcards

Describe how a respirometer works.

It is a chamber connected to a capillary tube with a drop of dye. As the organism in the chamber respires and uses oxygen, the pressure decreases and the liquid moves in the capillary.

What is the control for this practical?

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Replace the organism with an inert object of the same mass.

How do you use the volume of oxygen consumed using a respirometer?

Place a fixed mass of soda lime in the respirometer with the organism. Measure the distance moved by the dye, and use the formula volume = distance x πr^2

How can the volume of carbon dioxide produced be found?

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Perform two set-ups, one with soda lime (A) and one without (B). Find the volume of gas used in the given time.

Volume of carbon dioxide: volume of A - volume of B

How is the rate of respiration calculated using data from the respirometer?

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Rate =

Volume of oxygen used / mass of organism / time

State the hazard and safety precaution involved in the practical.

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The soda lime is corrosive. Wear eye protection and handle with gloves.

What are the controlled variables of this practical?

Mass of organism

Temperature

Mass of soda lime

Apparatus might be airtight, and replace air between each set-up

What is the formula for the respiratory quotient?

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RQ =

Volume of carbon dioxide produced / Volume of oxygen absorbed