Creeping Slime

The term taxis describes the way in which an organism is able to orient itself. Humans have highly complex sensory organs like eyes and ears, which help us determine our position and coordinate our movements. Simpler life forms like bacteria and slime moulds do not have such complex organs. Nevertheless, they are able to detect stimuli in their environment. The following two experiments aim at finding out about how they do this.

Hypothesis Phrase a hypothesis on how slime moulds orientate!

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Experiment 1: Finding Food

Material 2 Petri dishes with agar and cultivated slime mould (*Physarum polycephalum*), sterilised oat flakes, vinegar essence, distilled water

Conduct Position a sterilised oat flake in each Petri dish about 1.5 cm away from the plasmodium.

Cover the agars with a thin water film.

Place the Petri dishes in an unlit environment for several minutes at room temperature. Check them every three minutes.

Once one of the plasmodia is close to the food source, trickle some drops of vinegar essence on the oat flakes and put it back into the dark.

Observations Describe the slime mould's behaviour!

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Result Explain how the slime mould finds his food by interpreting his actions!

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Experiment 2: Sun worshipper or shade seeker?

Material 2 Petri dishes with agar and cultivated slime moulds (*Physarum polycephalum*), 2 torches

Conduct Position the torch in a way so that it shines onto the edge of the plasmodium.

Put the Petri dish with the torch into an unlit environment.

Check the whole thing after several minutes. Take notes on how the slime mould behaves!

Observations Describe the slime mould's behaviour!

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Result Explain how the slime moulds orientate and why the two behave differently!

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