2018

Wild Type Drosophila melanogaster Eye Pigments: Examining Absorbance Spectra and Light Sensitivity

Erin Brown
Parkland College

Taylor M. Delaney
Parkland College

Recommended Citation
https://spark.parkland.edu/ah/234

Open access to this Poster is brought to you by Parkland College's institutional repository, SPARK: Scholarship at Parkland. For more information, please contact spark@parkland.edu.
Wild Type D. melanogaster Eye Pigments: Examining Absorbance Spectra and Light Sensitivity

Erin Brown and Taylor Delaney
Bio-141, Section 002
Professor David Wilson

1. Abstract
The eyes of wild-type fruit flies, Drosophila melanogaster, contain various pigments that contribute to a black or red color. Chromatography techniques are used to separate and time these pigments. In this project, we extracted and separated absorbance spectra in different pigments using various methods. We compared how efficient these techniques are in separating and extracting the pigments and providing reliable results when examining absorbance spectra.

2. D. melanogaster Eye Pigments
Components of fruit fly eyes have pigment cells, which generate too much light passing through the structure. These pigments are separated to understand their function.
- Light enters the eye and absorbs light.
- The cells contain two biochemical pathways to create pigments.
- Parachute and hemoglobin pathways.
- Mutations in a gene can change eye color.
- We are interested in wild-type fruit fly eyes.
- We have no mutations and produce every pigment.

3. Methods
- Wash the eyes in 70% alcohol.
- Place the white pigment on a watch glass.
- Place the white pigment on a watch glass.
- Place the white pigment on a watch glass.
- Place the white pigment on a watch glass.
- Place the white pigment on a watch glass.
- Place the white pigment on a watch glass.

4. Procedure: Pigment Extraction and Spectrophotometry
- Strip of filter paper
- 10-wt white filter paper
- 0.1 molar of 25% ammonium
- Microscope (1)
- Centrifuge
- 100-200 mL and 2-20 mL
- 550 nm (wavelength)
- 550 nm (wavelength)

5. Procedure: Spectrophotometry and Photocell Sensitivity
- Strip of filter paper
- 10-wt white filter paper
- 0.1 molar of 25% ammonium
- Microscope (1)
- Centrifuge
- 100-200 mL and 2-20 mL
- 550 nm (wavelength)
- 550 nm (wavelength)

6. Conclusion
- Analysing the data, we determined that the spectrophotometer produced the best separation of pigments.
- The absorbance spectral peaks of the pigments matched.
- The absorbance spectral peaks were consistent with the band of light at 550 nm.
- The visible range showed the most change in absorbance.

7. Limitations and Improvements
- Separating flies between gender and age.
- Performing two-dimensional chromatography to separate the pigments more effectively.
- Using different light bulbs and conditions in the photometry experiment could yield different results.

8. Sources

Special Thanks
- Dean Shieh
- Kye Chapman