Absorbance and Fluorescence Characterization of Vitamin B2

This experiment requires Spectral Analysis version 4.8.1 or newer. Updates can be found at www.vernier.com/downloads.

Related Skills

It is important to read the Go Direct SpectroVis Plus or the Vernier Fluorescence/UV-VIS Spectrophotometer user guide before beginning this, or any, experiment with these instruments.

Instructor Notes

1. Riboflavin stock solution (20.0 mg/L) is prepared by weighing out 5.0 mg riboflavin. Transfer this to a 250 mL volumetric flask, add about 10 mL of ethanol, and dilute to mark with distilled water. This solution is light sensitive; it is best to store it in a brown bottle.
2. To simplify the halide dependence of riboflavin extension, have 0.1 M KBr available for the students to make their samples.

Sample Data

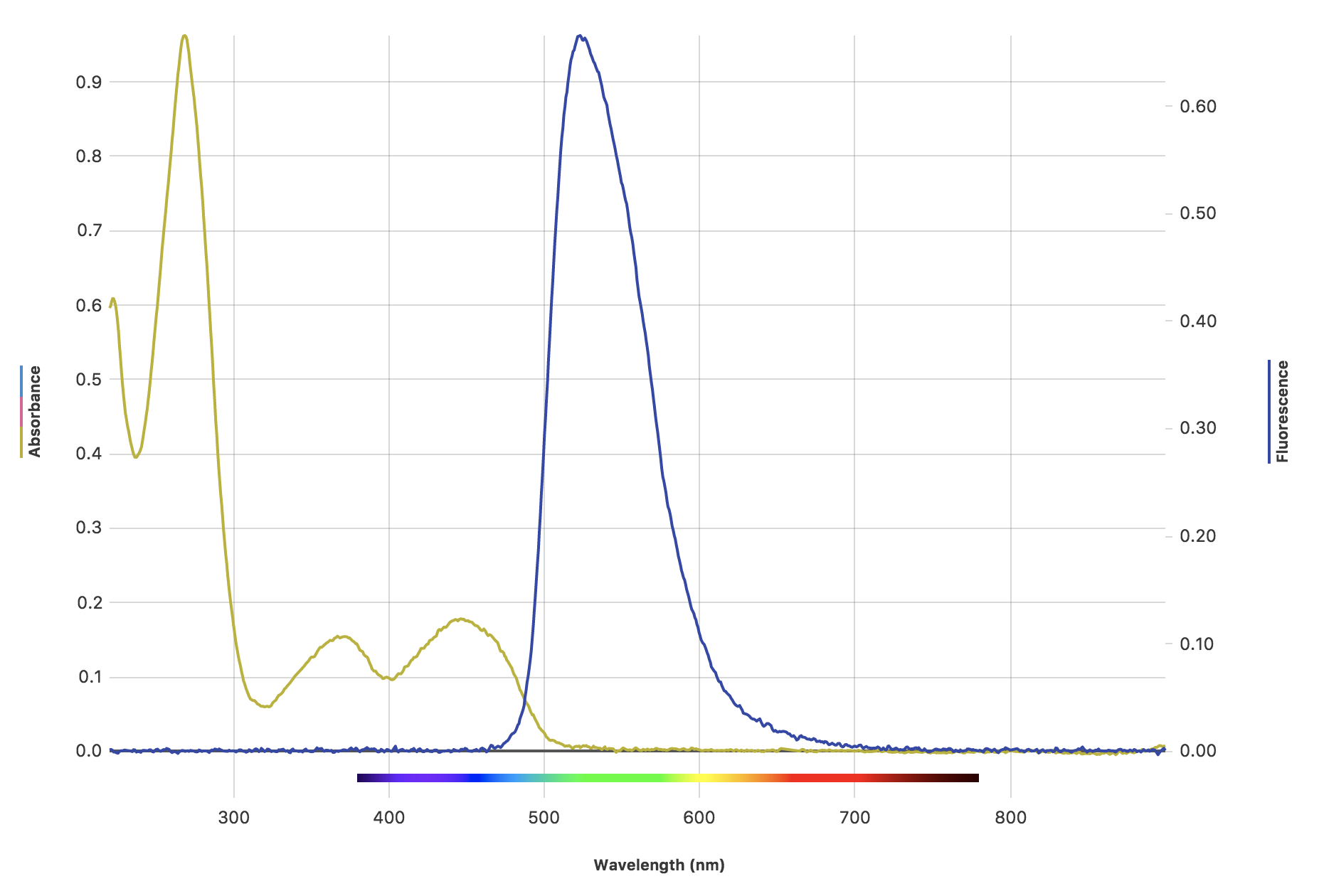


Figure 1 Stokes shift of riboflavin as taken with the   
Vernier Fluorescence/UV-VIS Spectrophotometer

Discussion

* As shown in Figure 1, the Stokes shift should be close to 90 nm when prepared in water.
* Fluorescence is a more sensitive technique compared with absorbance. You will see a stronger signal with fluorescence compared to the absorbance with the same concentration sample.