

## Light Absorption of Leaf Pigments

*Summary:* My group and I observed the portion of the visible light spectrum that is absorbed by the chloroplasts found in spinach leaves. We did this by producing a diluted solution of spinach leaf pigment extract, pouring it into a test tube and observing its light absorption properties through a spectroscope. The portion of the color spectrum that remained visible was from wavelength measurements of about 510nm to 640nm, which represents mostly green light along with a small amount of orange-red light.

*Methods & Results:* My group and I obtained a sample of spinach leaf extract solution in a test tube and diluted it with enough 90%-acetone/10%-water solution so that light could pass easily through the mixture. We held the test tube up to a Spectronic 20 spectrophotometer and observed the portion of the light spectrum that was reflected by the sample, which was found to be from ~510nm (blue-green) to ~640nm (orange-red). This indicated that the remaining portions of the visible spectrum were being absorbed by the pigments in the spinach leaf extract (400nm to 510nm and 640nm to 740nm), which is represented in diagram 1.



Diagram 1