

Elodea, Onion, Potato Lab Comparison and Analysis

Comparison Chart

	elodea	onion (stained with iodine)	potato (stained with iodine)
shape	rectangular	rectangular	pentangular
dimensions	25x50 microns	75x250 microns	150x150 microns
color of cytosol	clear	clear	clear
other colors present	green (chloroplasts)	none	purple (iodine and starch)
has chloroplasts	yes	no	no
has leucoplasts	no	no	yes
has chromoplasts	no	no	no
nucleus visible	no	yes	no
central vacuole visible	no	no	no

Purpose of Lab

The purpose of this lab was to how the diversity and unity in plant cells— that some structures exist in all plant cells, and some do not exist or are not as important in some plant cells but are in others. In other words, if you only looked at the Elodea cell, then you might infer that all other plant cells look very similar to it, but vastly different potato and onion cells can show that this is not the case. For example, while elodea and onion cells are long and rectangular, potato cells are pentangular, and larger. The color of all their cytosols are clear, but there are some other pigments in the cell that differ: for example, the elodea cells are mostly green because of their chloroplasts, and potato cells are purple due to their staining of iodine. They also have different combinations of plastids, sometimes having many or none of one type. Another point of comparison was that only the onion cells had their nucleus visible, and none of the cells had a visible central vacuole, even if it was the largest organelle of a cell. These were all interesting and informational aspects that sometimes differed and sometimes were constant amongst these three types of cells.