Mitosis Lab

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Demonstrators: [redacted]

Submission Due: March 19th, 2019

uOttawa

Faculté des sciences
Faculty of Science

BIO1140 Section B2

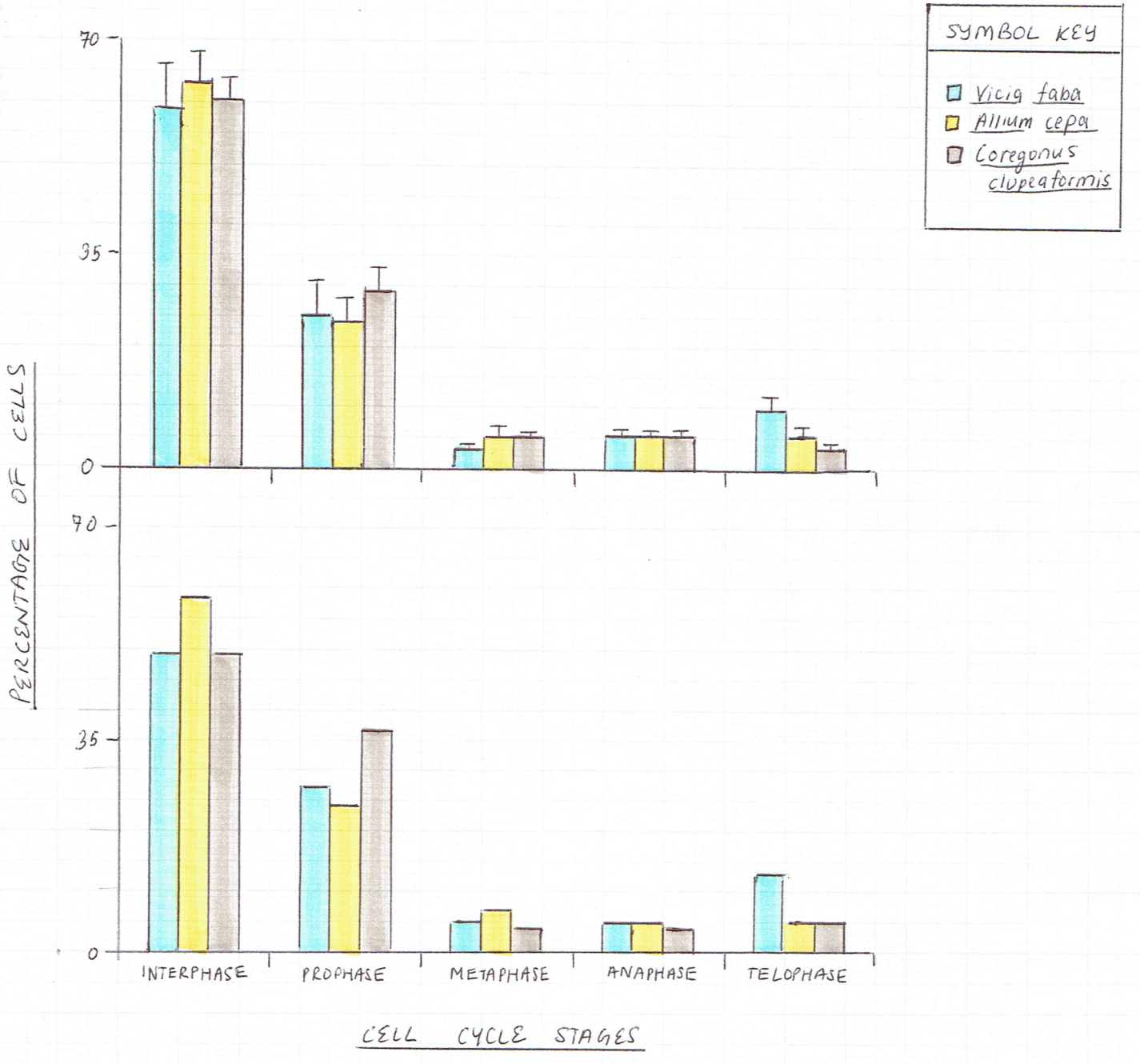

Figure 1.0. Percentage of cells observed in Vicia faba, Allium cepa and Coregonus clupeaformis in each stage of the cell cycle (interphase, prophase, metaphase anaphase, telophase). The top panel displays the class average of cells observed in each phase for which the mean + standard error is presented via error bars ($n = 15$). The bottom panel displays the personal data obtained by dividing the observed amount of cells in each cycle phase by the total amount of observed cells for that species and multiplying the dividend by 100 percent.

Overall the three organisms observed were very similar in the percentages found in each stage (based on class average) with a few minor discrepancies. In interphase, *Vicia faba and Coregonus clupeaformis* were within 1% of each other while *Allium cepa* was 4% higher. In prophase *Vicia faba* and *Allium cepa* were within 1% of each other while *Coregonus clupeaformis* was 8% more. In metaphase and anaphase the three species had little difference (all between 3 - 5%) and telophase was also similar with the exception of *Vicia faba* which was twice as more than the other two species (10% vs the 5% in *Vicia faba* and *Allium cepa*).

When comparing class data and personal the data was nearly identical with a few minor differences. The first difference is seen in interphase, personal data shows *Vicia faba* and *Coregonus clupeaformis* having a 9% difference with *Allium cepa* while in class data that difference was much less (3%). Is prophase personal data showed *Coregonus clupeaformis* having a 12% more than the other two species and in the class data that difference was less (6%). Otherwise the general trend is very similar in comparison and considering the circumstances.

Based on the observations, interphase is the longest stage in the cell cycle for all species. Theoretically interphase takes around 80% of relative time of the cell cycle, in this lab however both in class data and personal showed that interphase was to be anywhere from 50% to 65% of the overall cell cycle. The next largest amount of time spent after interphase was prophase, which took about 30% of the relative time, half of that of interphase. The other 3 phases took up equally relative times in the stages ranging from 3% to 9% with metaphase being slightly lower than the rest (under 4%).

BIO1140 Mitosis Marking Scheme

Student ID: Corrector:

1- Presentation	
Correct Plot type (bar graph)	/1
Tick marks: 3 to 5 (Y axis) per panel - do not obscure data	/1
Axes labels (present and appropriate for variables plotted)	/1
Axis scale is the same on both panels	/0.5
Axes scale encompasses data	/0.5
Bars correctly spaced (separation between phases)	/0.5
Borders and / or frame are NOT present	/0.5
Layout on page appropriate – 2/3 for graph rest for caption	/1
General presentation (clean and clear)	/2
total presentation	**/8**
2- Data	
Symbols (colours or patterns) used	/1
Symbol key present (one only)	/1
Error bars (only + SE shown) – class data panel only	/1
Data bars of uniform width	/1
Average +SE on upper panel	/1
Personal data on lower panel	/1
Total data	**/6**
3- Caption	
Begins with a figure number	/1
First sentence is a specific title	/1
Genus and species are indicated	/1
Genus and *species* are correctly written (italics or underlined)	/1
States that means are presented	/1
States that errors bars represent +SE	/1
Sample size or sample size range is indicated	/1
Explanation of each panel	/1
Total Caption	**/8**
4- Conclusion and misc.	
Comparison between data (group/class + bean/onion/fish)	/2
Spelling and grammar	/1
Conclusion regarding relative time of cell cycle phases	/3
Spelling and grammar	/1
Total Conclusion	**7**
Total report 29	**/29**
In-lab evaluation (up to 6 marks) 6	**/6**
Late penalty (-10% per late day) or other	
Total Lab4 35	**/35**