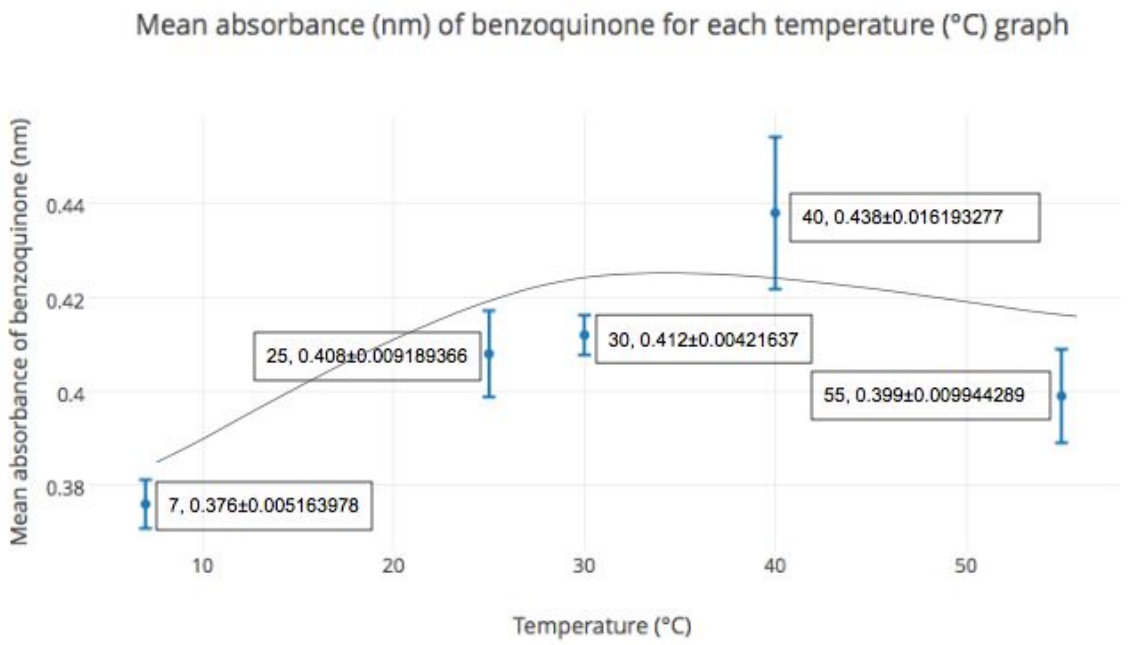

Evaluation:

Conclusion:

Analysis:
According to my hypothesis if I experimented using temperatures within the range of 22-45 degrees celsius, the catecholase enzyme would work at its best through this range because the temperatures around 22-45 degrees celsius represent its optimum temperature (temperature at which the enzyme functions at its highest rate). If a lower or higher temperature was used then the enzyme would denature and the reaction wouldn't be as efficient.

For my independent variable I used different temperatures (7, 25, 30, 40, 55 °C) and for my dependent variable I measured the absorbance of benzoquinone after the reaction occurred for 1 minute, benzoquinone is the product obtained from the reaction of catecholase at different temperatures, also 0.1% catechol substrate was used also to speed up the reaction, according to my investigation, the higher the absorbance the more benzoquinone is produced therefore the reaction occurred at its optimum rate.
According to my table of data and my values the most absorbance was measured at the temperatures of 25, 30 and 40 degrees celsius, this means that the highest amounts of benzoquinone were achieved at these exact temperatures therefore the rate of reaction was its highest between 22-45 degrees celsius as stated in my hypothesis. The mean absorbance for these temperatures were 0.408 nm for 25°C, 0.412 nm for 30 °C, and 0.438 nm for 40 °C, these were the highest values and according to the data the enzyme worked at its highest rate at 40 °C. At the lowest and highest temperatures (7, and 55°C) the absorbance was low at 7 degrees and then at 55 it decreased because the enzyme denatured and the rate of reaction decreased.