**Pulse-Chase Experiment**

**Objective:**

To follow a specific cohort of molecules by radiolabeling them with a radioactive amino acid.

**Summary:**

In a pulse chase experiment, cells are grown in medium and exposed for a short time period to a large amount of radioactive amino acid. This is called the pulse, and during this time period, any newly synthesized proteins will incorporate the radioactively labeled amino acid.

The cells are removed from the radiolabeled medium and placed in non-radiolabeled medium (the chase). At specified time points, the protein(s) of interest can be monitored via radioactivity. Thus, one can use this procedure to follow a protein during its lifetime in a cell.

Pulse-chase experiments are commonly used to follow the intracellular location of a protein, or the transformation of metabolites during a biochemical reaction time.

**Reference:**

http://www.biology-online.org/dictionary/pulse_chase

**Example of Pulse-Chase Experiment:**

Reference:


Cells were grown in medium without methionine or cysteine for one hour. They were then incubated with $^{35}$S-labeled methionine and cysteine for five minutes, and chased with unlabeled cysteine and methione for specified time intervals. The cells were harvested and lysed, and the proteins of interest were purified via immunoprecipitation, and viewed for radiolabeling.
In this figure, tapasin has been immunoprecipitated and observed for radioactive labelling. This figure illustrates how a pulse-chase experiment can follow the formation of a conjugate between tapasin and ERp57 at the indicated time points, and also the decrease in free tapasin.