Biochemistry Cumulative Examination
3 May 2018

Total: **100 points**

1) Compare and contrast target-based and phenotype-based drug discovery. Make sure you list the major advantages and disadvantages of each strategy. (**20 points**)

2) Describe how you would perform a biochemical affinity purification to identify the protein target of a small molecule of interest. What are some of the drawbacks of this method? How does chemical or ultraviolet light-induced cross-linking approaches address some of these issues? (**20 points**).

3) What is SILAC? Describe how you would perform a SILAC experiment to identify the protein target of a small molecule of interest. (**20 points**).

4) How is RNAi perturbation able to identify the protein target of a small molecule of interest? Describe how you would design this experiment and your expected results. (**20 points**).

5) How can multidimensional profiling using phenotypic high-throughput screening data enable the identification of the mechanism of action of a small molecule of interest? (**20 points**).