

4/22/2005

Homework for Protein Bioinformatics 260.841 from class on 29 March 2005:

1. Which amino acids have chiral side chains? What is their chirality in the R, S notation?

2a. Draw the following peptide as it would exist in conditions like the cytosol of bacteria (reducing, pH 7).

KCHPEY

2b. What is the mass of this peptide?

2c. What is its isoelectric point?

2d. What should the absorbance at 280 nm be for a 1 mg/ml solution in a 1 cm pathlength cuvette?

2e. What will happen under oxidizing conditions?

2f. What will happen at pH 3.5?

2g. What is a possible posttranslational modification that could occur to this peptide?

2h. How would you characterize the average 'hydrophobicity' of this peptide using one of the websites below?

Some useful websites:

[http://ca.expasy.org/tools/pi\\_tool.html](http://ca.expasy.org/tools/pi_tool.html)

<http://ca.expasy.org/cgi-bin/protparam.html>

<http://psyche.uthct.edu/shaun/SBlack/aagrease.html>