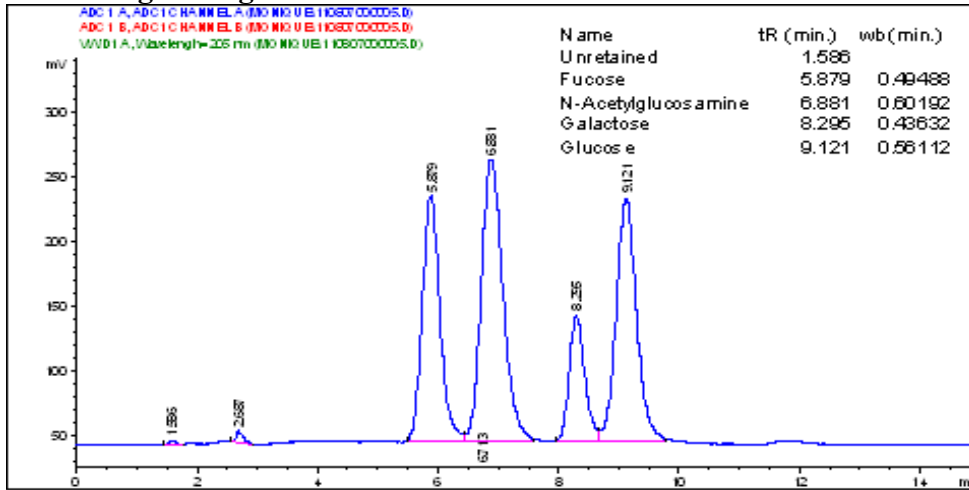


CHEMISTRY 133
Spring, 2015 Homework Set 3.2 – Additional Problem 2

Refer to the following chromatogram which shows the separation of 4 sugars using normal phase HPLC (more polar stationary phase – less polar mobile phase) with a 4.6 x 250 mm column. Compound names, retention times, and widths at the baseline, are given in the box within the chromatogram figure.



- a) Calculate the retention factor (k) of fucose (the first major peak).
- b) Calculate N and H (in mm/plate) using the glucose peak.
- c) Calculate the resolution (R_s) and the separation factor (α) between galactose and glucose.
- d) Methylglucopyranoside can be made from glucose by replacing one of the hydroxy groups with a methoxy group (on the number 1 carbon). Predict whether you would expect methylglucopyranoside to be eluted before or after glucose. Explain your prediction in terms of polarity considerations.