**FO9 Homework assignment on HFR X F- Cross**

*To hand in at beginning of lab on Tuesday Nov 17th*

To complete this assignment you will need to consult one or more of these web sites (links are on 322 web site)

**PROFILING OF E. COLI CHROMOSOME**

http://www.shigen.nig.ac.jp/ecoli/pec/index.jsp

**E. coli genome and proteome database**

http://genprotec.mbl.edu:80/

**COLIBIRI**

http://genolist.pasteur.fr/Colibri/

1. Rewrite the genotypes of the Hfr and F- parents adding the wild-type alleles for each gene that differs between the two strains. Note that there are two different sets of allele symbols for both antibiotic resistant traits. You may use either designation.

2. Draw a diagram of the Hfr X F- cross. Represent the F- genome with a circle and the Hfr donor genome as a linear piece wrapped around the circle with the homologous regions opposite each other. You will need to consult one of the Web sites (above) for the map location of each gene. Map distance should be in minutes not kb. Indicate scale and units on your map. Indicate all genes/alleles on both chromosomes.

3. What order will each of the genetic markers (*that differ in the two strains*) be transferred in? How many minutes apart is each pair of markers?


5. What does the rpoB gene code for? What metabolic process does rifampicin inhibit?