

20. Figure 27.3 illustrates the response of R (ATP-regenerating) and U (ATP-utilizing) enzymes to energy charge.

- a. Would hexokinase be an R enzyme or a U enzyme? Would glutamine;PRPP amidotransferase, the second enzyme in purine biosynthesis, be an R enzyme or a U enzyme?
- b. If energy charge 0.5: Is the activity of hexokinase high or low? Is ribose-5-P pyrophosphokinase activity high or low?
- c. If energy charge 0.95: Is the activity of hexokinase high or low? Is ribose-5-P pyrophosphokinase activity high or low?

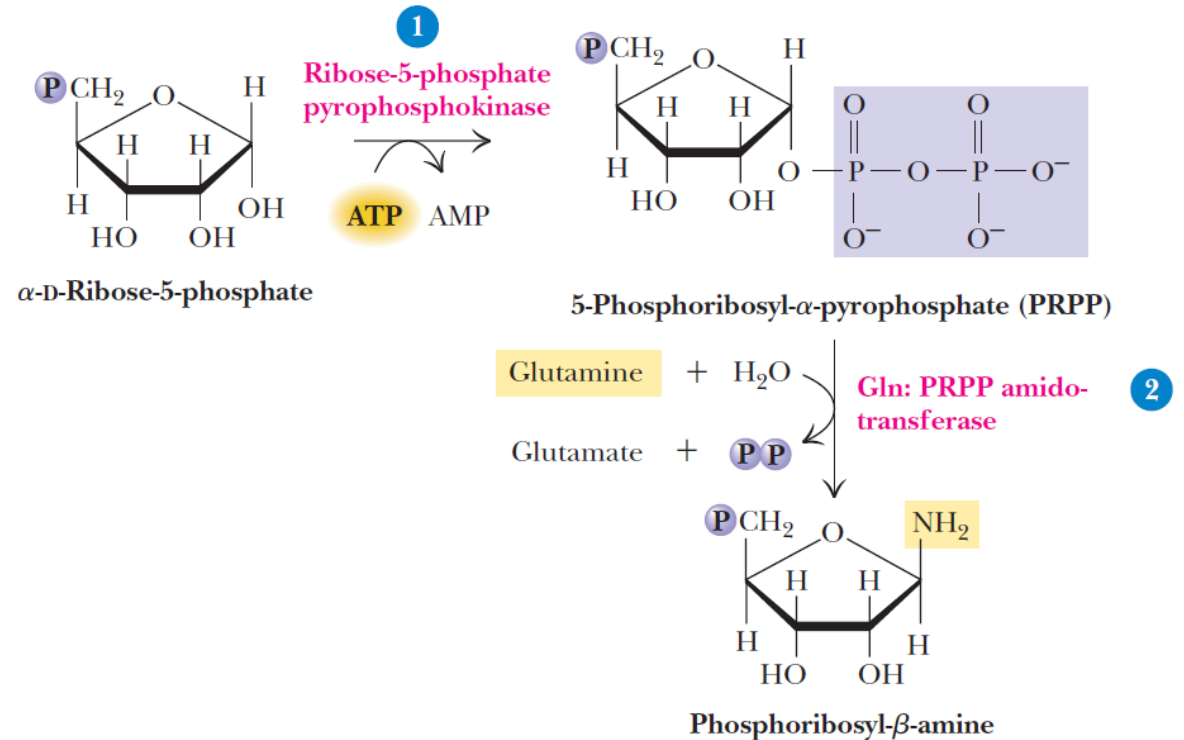
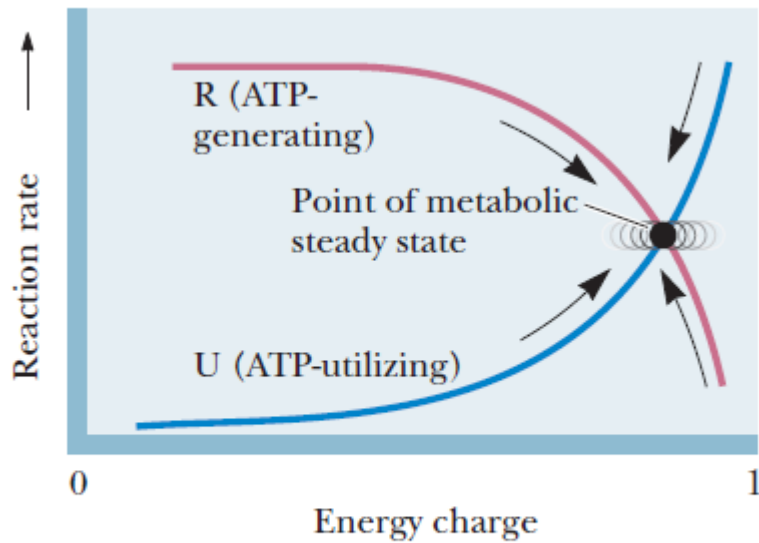


FIGURE 27.3 Responses of regulatory enzymes to variation in energy charge.

16. The phenotype of a T172D mutation in AMPK
A T172D mutant of the AMPK is locked in a permanently active state. Explain.