



Compound	$G^{\circ}$ kJ/mol
<b>High energy</b>	
Phosphoenolpyruvate	-51.6
1,3-Bisphosphoglycerate	-52.0
Acetyl phosphate	-44.8
ATP	-31.8
ADP	-31.8
<b>Low energy</b>	
AMP	-14.2
Glucose 6-phosphate	-13.8

**Figure 5.12** High-energy bonds. The table shows the free energy of hydrolysis of some of the key phosphate esters and anhydrides, indicating that some of the phosphate ester bonds are of higher energy than others. Structures of four of the compounds are given to indicate the position of low-energy and high-energy bonds. ATP contains three phosphates, but only two of them are high energy (shown in blue). ADP contains two phosphates of which only one is high energy. AMP does not contain a high-energy phosphate bond. Also shown is the structure of the coenzyme acetyl-CoA. The C-S bond between the acetyl portion and the β-mercaptoethylamine portion is a high-energy thioester bond (see Table 3.1). The "R" group of acetyl-CoA is a 3' phospho ADP group.