

Unnumbered 27 p468c
 Biochemistry: A Short Course, Second Edition
 © 2013 W. H. Freeman and Company

1

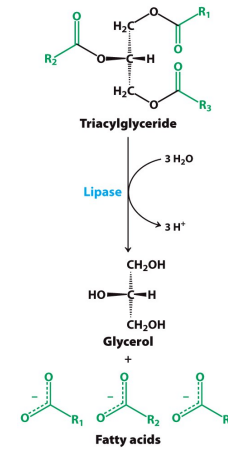


Figure 27.1
 Biochemistry: A Short Course, Second Edition
 © 2013 W. H. Freeman and Company

2

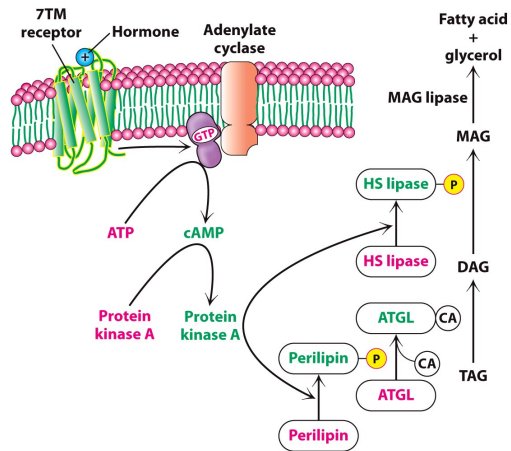
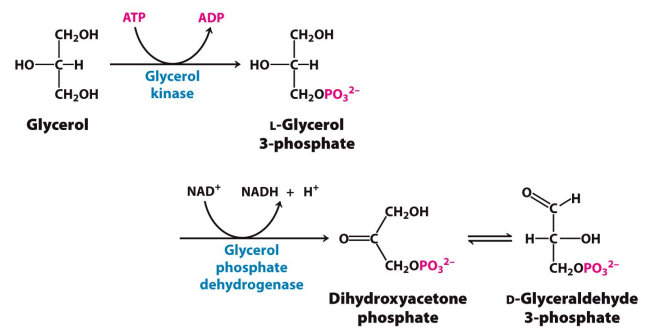


Figure 27.2
 Biochemistry: A Short Course, Second Edition
 © 2013 W. H. Freeman and Company

3



Unnumbered 27 p467a
 Biochemistry: A Short Course, Second Edition
 © 2013 W. H. Freeman and Company

4

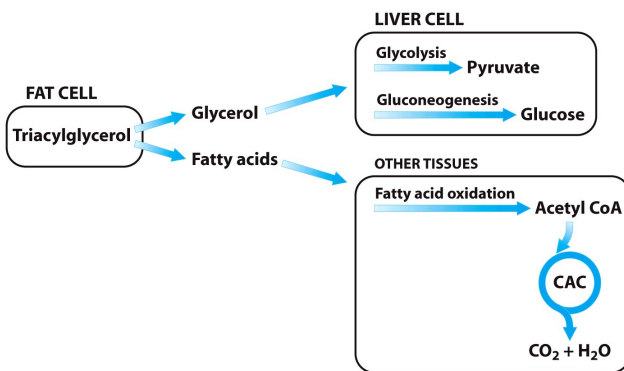
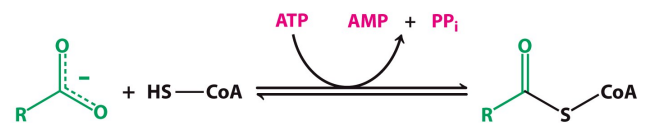


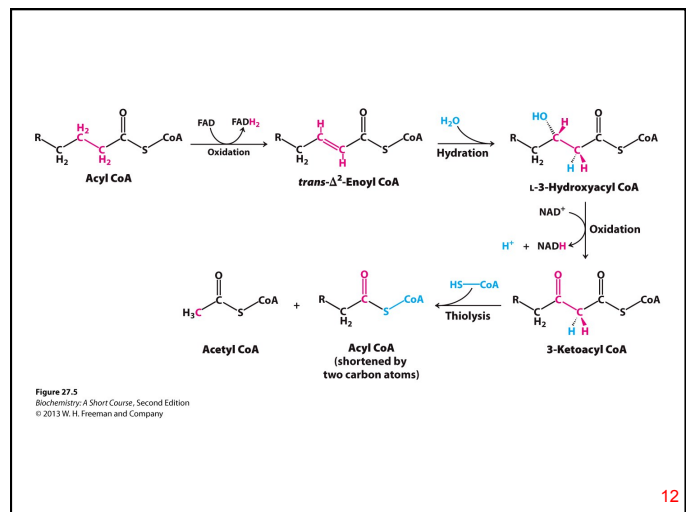
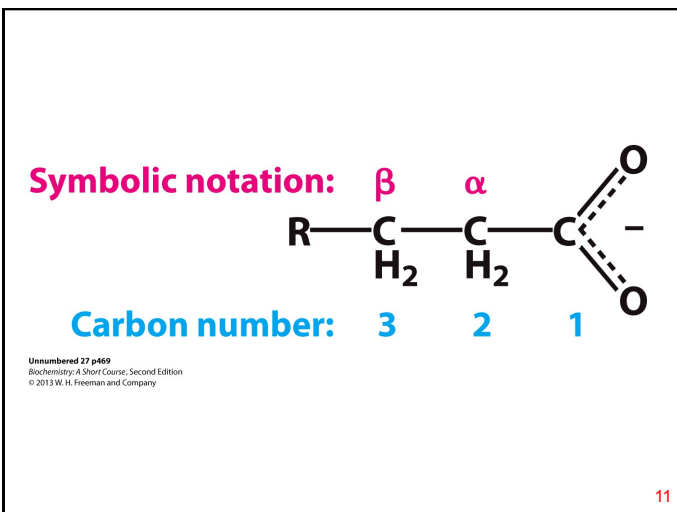
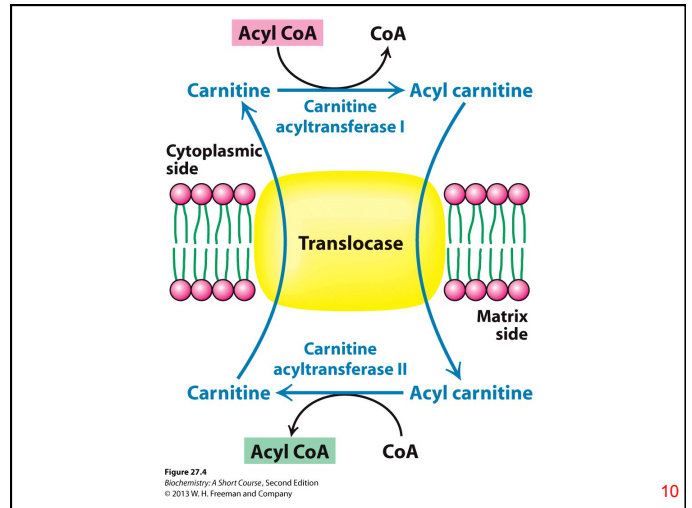
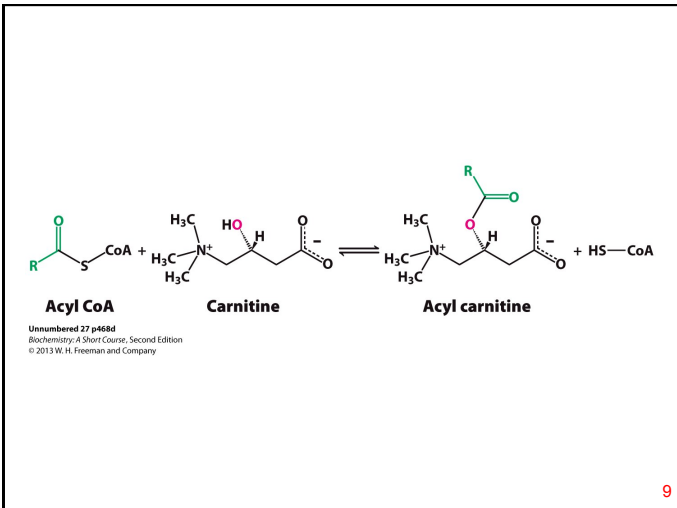
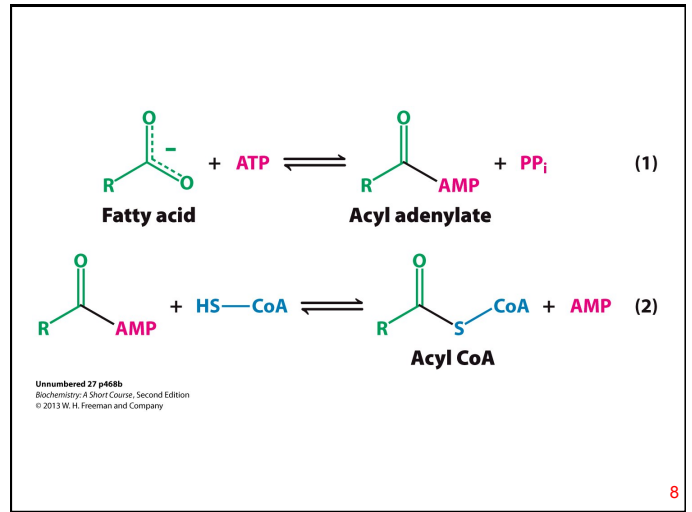
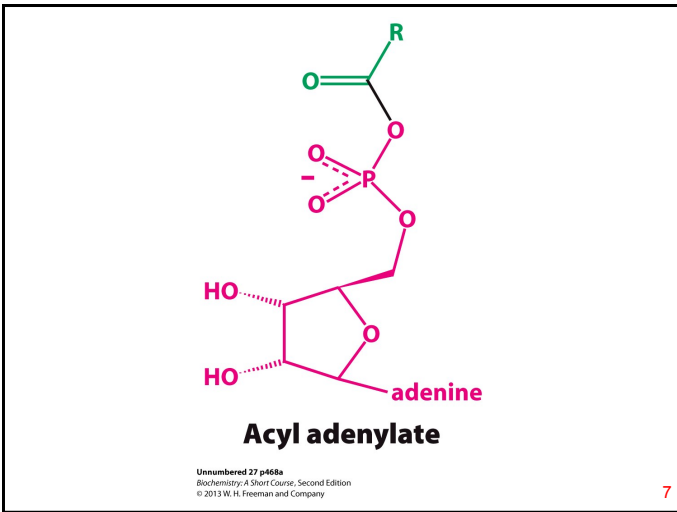
Figure 27.3
 Biochemistry: A Short Course, Second Edition
 © 2013 W. H. Freeman and Company

5



Unnumbered 27 p467b
 Biochemistry: A Short Course, Second Edition
 © 2013 W. H. Freeman and Company

6



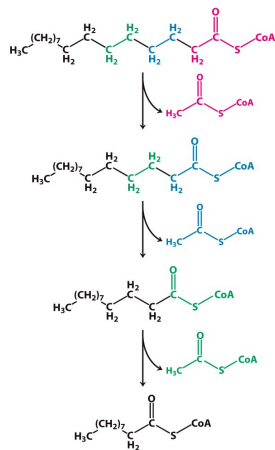


Figure 27.6
Biochemistry: A Short Course, Second Edition
© 2013 W. H. Freeman and Company

13

Table 27.1 Principal reactions required for fatty acid degradation

Step	Reaction	Enzyme
1	Fatty acid + CoA + ATP \rightleftharpoons acyl CoA + AMP + PP _i	Acyl CoA synthetase (also called fatty acid thiokinase and fatty acid: CoA ligase)*
2	Carnitine + acyl CoA \rightleftharpoons acyl carnitine + CoA	Carnitine acyltransferase I and II (also called carnitine palmitoyl transferase I and II)
3	Acyl CoA + E-FAD \rightleftharpoons trans- Δ^2 -enoyl CoA + E-FADH ₂	Acyl CoA dehydrogenases (several isozymes having different chain-length specificity)
4	trans- Δ^2 -Enoyl CoA + H ₂ O \rightleftharpoons L-3-hydroxyacyl CoA	Enoyl CoA hydratase (also called crotonase or 3-hydroxyacyl CoA hydrolyase)
5	L-3-hydroxyacyl CoA + NAD ⁺ \rightleftharpoons 3-ketoacyl CoA + NADH + H ⁺	L-3-Hydroxyacyl CoA dehydrogenase
6	3-Ketoacyl CoA + CoA \rightleftharpoons acetyl CoA + acyl CoA (shortened by two carbon atoms)	β -Ketothiolase (also called thiolase)

*An AMP-forming ligase.

Table 27.1
Biochemistry: A Short Course, Second Edition
© 2013 W. H. Freeman and Company

14

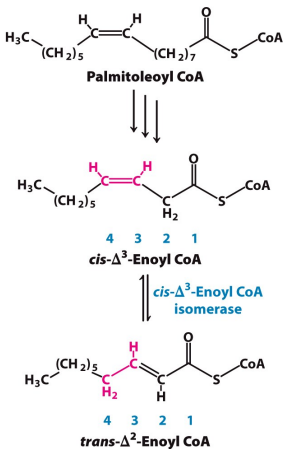


Figure 27.7
Biochemistry: A Short Course, Second Edition
© 2013 W. H. Freeman and Company

15

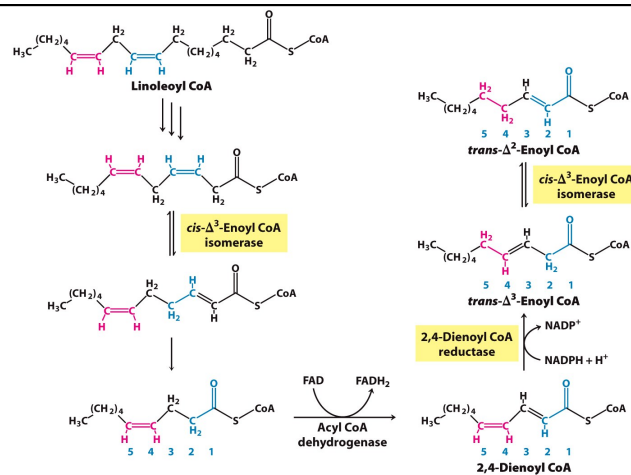
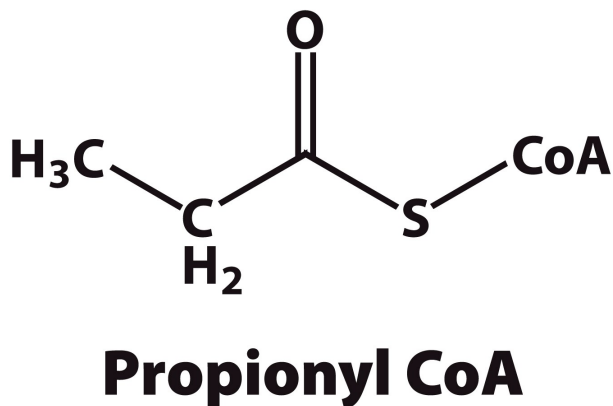


Figure 27.8
Biochemistry: A Short Course, Second Edition
© 2013 W. H. Freeman and Company

16



Unnumbered 27 p473
Biochemistry: A Short Course, Second Edition
© 2013 W. H. Freeman and Company

17

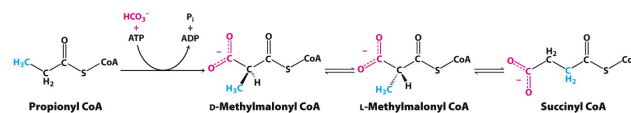


Figure 27.9
Biochemistry: A Short Course, Second Edition
© 2013 W. H. Freeman and Company

18

