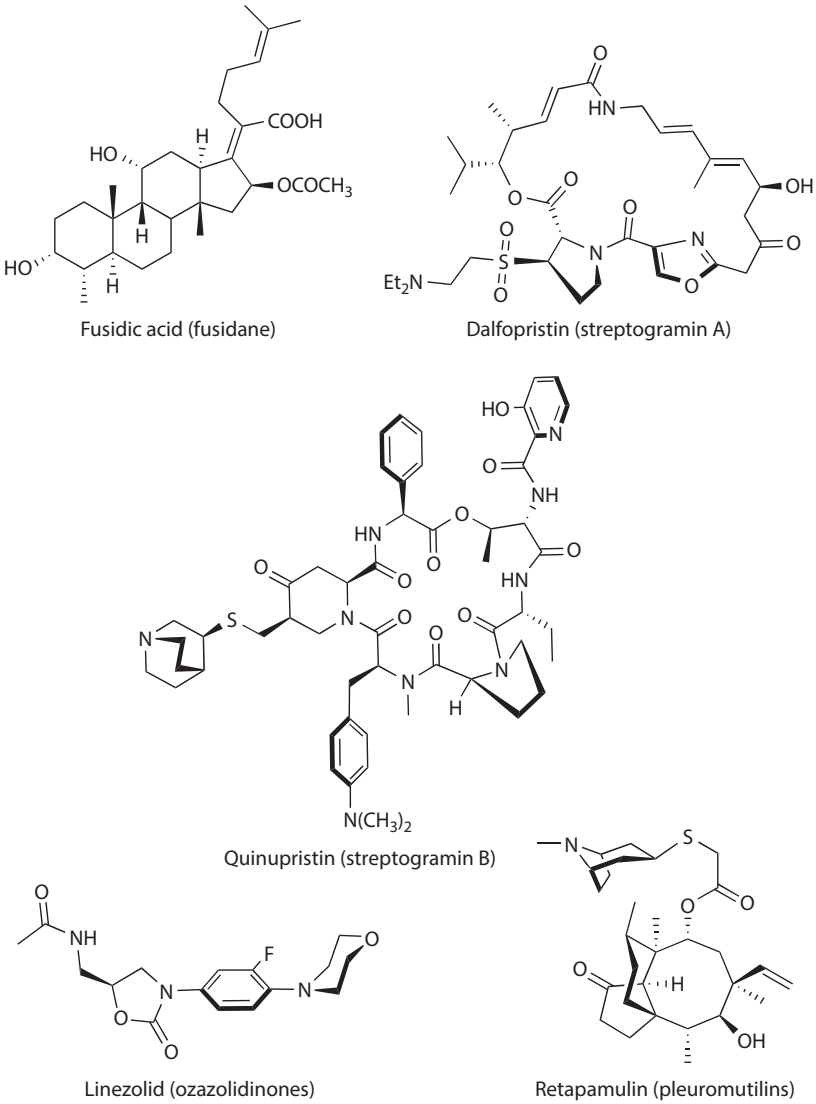

FIGURE 23.7 (*Continued*) Representative structures of antibiotics affecting protein biosynthesis.

Tigecycline is generally bacteriostatic (like tetracyclines) but is bactericidal against some pathogens. It is effective on strains resistant to the older tetracyclines and is active against MRSA, vancomycin-resistant enterococci, and many multidrug-resistant Gram⁻ bacteria in addition to low activity against *P. aeruginosa*. Omadacycline, a minocycline derivative, and eravacycline, a fluorocycline, are in phase II and III clinical trials, respectively.

23.7.2 Inhibitors of the 50S Ribosomal Subunit

23.7.2.1 Amphenicols

They comprise phenylpropanoid antibiotics. The first broad-spectrum antibiotic was chloramphenicol (1947; *Streptomyces venezuelae*) (Figure 23.7). Its chemical structure was determined, and in 1949, a synthesis was described and used for commercial production. Of the four possible diastereoisomers, only the *R*,*R*-isomer is active and is separated during synthesis.