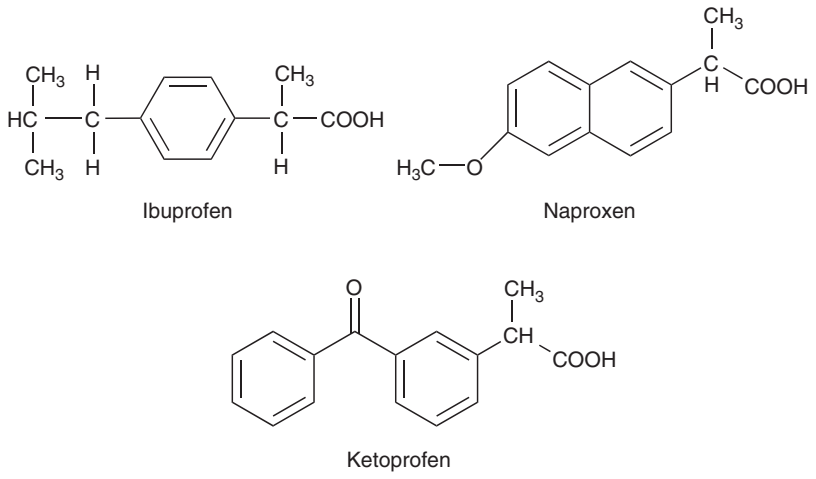

Figure 5-29 Three common nonsteroidal anti-inflammatory drugs (NSAIDs): ibuprofen, naproxen, and ketoprofen. All are reversible inhibitors of the prostaglandin H synthase.

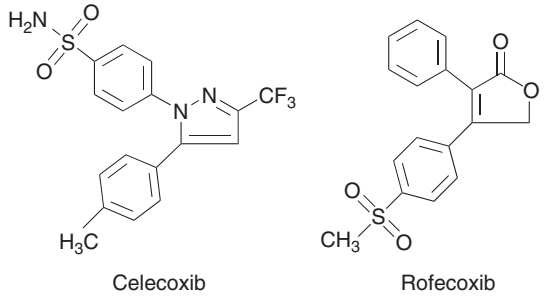

Figure 5-30 Two prescription NSAIDs. Rofecoxib has been withdrawn from the market.

Lipidoses

Certain genetic diseases result in derangements of lipid storage. These so-called lipid storage diseases, or *lipidoses*, are caused by a defect in the activity of one or another of several catabolic enzymes, notably those involved in sphingolipid and sterol metabolism (see Table 5-4).

All lipidoses are rare, with Gaucher disease being the one most commonly seen in the clinic. Several of these diseases have multiple subtypes, and the severity can vary with the subtype. Treatment for many lipidoses is only supportive, and there may be no specific therapy (enzyme replacement therapies for Gaucher disease and Fabry disease are available now, however). Some are associated with particular ethnic groups; for example, Tay-Sachs and Gaucher disease are associated with Jewish families.

Leukotrienes and Treatments for Asthma

Asthma is a pathological condition involving edema and constriction of the airway. It can be induced by allergens, exercise, and exposure to cold temperatures. Leukotrienes play a critical role in its pathology.

Leukotrienes are made primarily by inflammatory cells, such as macrophages, mast cells, and polymorphonuclear leukocytes (the "leuko" part of the name "leukotriene" stems from the original isolation of these compounds from leukocytes). They are synthesized from arachidonic acid by the enzyme 5-lipoxygenase (abbreviated as 5-LO), a non-heme iron dioxygenase, and further acted on by various specialized enzymes.

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