

) Red blood cells are packed with hemoglobin, a large tetrameric protein composed of four polypeptide chains, each of which is covalently bound to an iron-containing heme. Hemoglobin carrying oxygen is known as oxyhemoglobin, and hemoglobin carrying carbon dioxide is called carbaminohemoglobin (or carbamylhemoglobin). The globin of hemoglobin releases CO<sub>2</sub>, and the iron binds to O<sub>2</sub> in regions of high oxygen concentration, as in the lung. Carbohydrate chains that act as antigens and determine the blood group of an individual for the purposes of blood transfusion. The most notable of these are the A and B antigens, which determine the four primary blood groups, A, B, AB, and O (Table 10–2).