Figure 1. Calpain-3 is used to convert certain muscle cell proteins to their operational form (left). In limb-girdle muscular dystrophy type 2A, calpain-3 is deficient (X) (right). Consequently some muscle cell proteins fail to become operational. The lack of these operational proteins causes a decrease in cell function characterized by muscle weakness, muscle wasting and muscle damage that leads to leakage of measurable muscle enzyme (i.e., creatine kinase; CK) into the blood.