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Quinidine

National Cancer Institute

Source

National Cancer Institute. *Quinidine*. NCI Thesaurus. Code C793.

An alkaloid extracted from the bark of the Cinchona tree with class 1A antiarrhythmic and antimalarial effects. Quinidine stabilizes the neuronal membrane by binding to and inhibiting voltage-gated sodium channels, thereby inhibiting the sodium influx required for the initiation and conduction of impulses resulting in an increase of the threshold for excitation and decreased depolarization during phase 0 of the action potential. In addition, the effective refractory period (ERP), action potential duration (APD), and ERP/APD ratios are increased, resulting in decreased conduction velocity of nerve impulses. Quinidine exerts its antimalarial activity by acting primarily as an intra-erythrocytic schizonticide through association with the heme polymer (hemazoin) in the acidic food vacuole of the parasite thereby preventing further polymerization by heme polymerase enzyme. This results in accumulation of toxic heme and death of the parasite.