

Synthesis and application of spin-labeled pharmacologically active compounds

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A new and promising field in the application of the spin labeling technique in biological research consists in the use of spin-labeled analogs of compounds possessing pharmacological activity. Methods of synthesis and examples of applications of several groups of such spin labels are reviewed. Spin-labeled sulfonamids are used for structural studies of carbonic anhydrase, and estimation of this enzyme and other related nonspin-labeled sulfonamids by the EPR method. Spin-labeled anesthetics are employed in studies of the mechanism of anesthesia, spin-labeled choline esters - in studies of acetylcholinesterase and acetylcholine receptor. The main point of application of spin-labeled narcotics, with broad perspectives also for other biologically active spin labels is the spin-immunoassay. Spin-labeled antibiotics, vitamins and antineoplastic agents have been synthesized and utilized as well.