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12: gem-Difluorocyclopropanes as Key Building Blocks for Novel Biologically Active Molecules13: Fluorous Mixture Synthesis (FMS) of Drug-like Molecules and Enantiomers, Stereoisomers, and Analogues of Natural Products; 14: Fluorine-18 Radiopharmaceuticals; Applications of Fluorinated Amino Acids and Peptides to Chemical Biology and Pharmacology; 15: Application of Artificial Model Systems to Study the Interactions of Fluorinated Amino Acids within the Native Environment of Coiled Coil Proteins; 16: Fluorinated Amino Acids and Biomolecules in Protein Design and Chemical Biology
17: Effects of Fluorination on the Bioorganic Properties of Methionine18: Structure Analysis of Membrane-Active Peptides Using 19F-labeled Amino Acids and Solid-State NMR; 19: Study of Metabolism of Fluorine-containing Drugs Using In Vivo Magnetic Resonance Spectroscopy; Appendix; Approved Active Pharmaceutical Ingredients Containing Fluorine; Section 1. Fluorine-containing Drugs for Human Use Approved by FDA in the United States; Section 2. Fluorine-containing Drugs for Veterinary Use Approved by FDA in the United States; Index; color plates

Sommario/riassunto

The extraordinary potential of fluorine-containing molecules in medicinal chemistry and chemical biology has been recognized by researchers outside of the traditional fluorine chemistry field, and thus a new wave of fluorine chemistry is rapidly expanding its biomedical frontiers. With several of the best selling drugs in the world crucially containing fluorine atoms, the incorporation of fluorine to drug leads has become an essential practice in biomedical research, especially for drug design and discovery as well as development. Focusing on the unique and significant roles that fluorine