

## Fluorine in medicinal chemistry and chemical biology

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### Abstrak

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 plays in medicinal chemistry and chemical biology, this book reviews recent advances and future prospects in this rapidly developing field. Topics covered include: \* Discovery and development of fluorine containing drugs and drug candidates.\* New and efficient synthetic methods for medicinal chemistry and the optimisation of fluorine-containing drug candidates.\* Structural and chemical biology of fluorinated amino acids and peptides.\* Fluorine labels as probes in metabolic study, protein engineering and clinical diagnosis.\* Applications of  $^{19}\text{F}$  NMR spectroscopy in biomedical research. An appendix presents an invaluable index of all fluorine-containing drugs that have been approved by the US Food and Drug Administration, including information on structure and pharmaceutical action. Fluorine in Medicinal Chemistry and Chemical Biology will serve as an excellent reference source for graduate students as well as academic and industrial researchers who want to take advantage of fluorine in biomedical research.