Insights: Publications

Protecting Deuterated Drugs

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Deuterium (^2H) is a nonradioactive isotope of hydrogen that contains a neutron in addition to hydrogen's proton and electron. Deuterium can covalently bind to other atoms in the same manner as hydrogen. Because deuterium and hydrogen are essentially the same size, a deuterated compound and its hydrogen-containing (proteo) counterpart may bind similarly to a biological target, such as protein relevant to treating disease. However, deuterium is heavier than hydrogen and can form stronger bonds with carbon. These differences can give rise to differences in pharmacological properties.