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Deuterium Oxide

National Cancer Institute

Source

National Cancer Institute. *Deuterium Oxide*. NCI Thesaurus. Code C91099.

A stable, non-radioactive isotopic form of water, containing 2 atoms of deuterium (D) and one atom of oxygen ($2D_2O$), with DNA-labeling activity. Upon ingestion of deuterium oxide, $2H$ is incorporated into the deoxyribose moiety of DNA of newly divided cells. Rapidly dividing cells, as in the case of B-cell chronic lymphocytic leukemia (B-CLL), can be labeled with deuterium oxide and measured using gas chromatography and/or mass spectrometry.