

DESIGN PRINCIPLES AND POTENTIAL APPLICATIONS OF MOLECULAR HYDRAZONE SWITCHES FOR PH IMAGING IN ¹⁹F MRI

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Numerous substances, including polymers, perfluorocarbon emulsions, and various small molecules, have been explored for their potential as ¹⁹F contrast agents. This exploration arises from the challenge of designing suitable fluorinated contrast agents due to the absence of fluorine in soft tissues [1-2]. Hydrazone switches, in particular, hold promise as functional contrasts for ¹⁹F MRI due to their ability to undergo isomerization in response to biologically relevant external stimuli, such as pH [3]. The ease of modifying their structure, including the introduction of paramagnetic groups, opens the door to various potential applications in MRI [4-6].

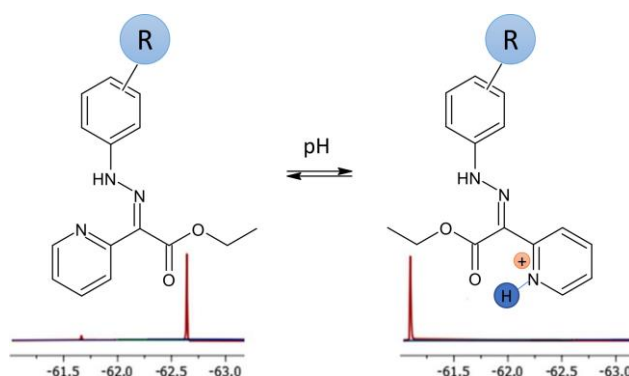


Fig. 1. Basic structure of a hydrazone molecular switch and its ¹⁹F NMR spectrum in various environments. R = F, CF₃, etc."

References

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