Prodrug strategies for targeted therapy triggered by reactive oxygen species

Prodrug strategies for targeted therapy triggered by reactive oxygen species (ROS) have been associated with numerous pathophysiological conditions including cancer and inflammation and ROS stimuli constitutes a potential trigger for drug delivery strategies. Over the past decade, a number of ROS-sensitive functionalities have been identified with the purpose of introducing disease-targeting properties into small molecules drugs – a prodrug strategy that offers a promising approach for increasing the selectivity and efficacy of treatments. This review will provide an overview of the ROS-responsive prodrugs developed to date. A discussion on the current progress and limitations is provided along with a reflection on the unanswered questions that need to be addressed in order to advance this novel approach to the clinic.

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