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Успехи химии

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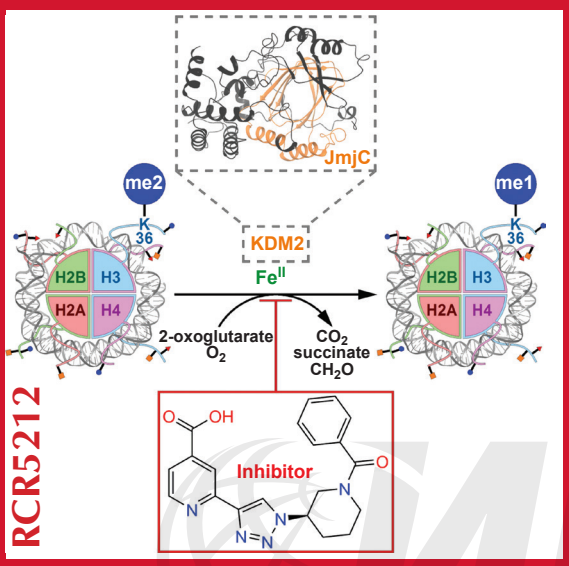

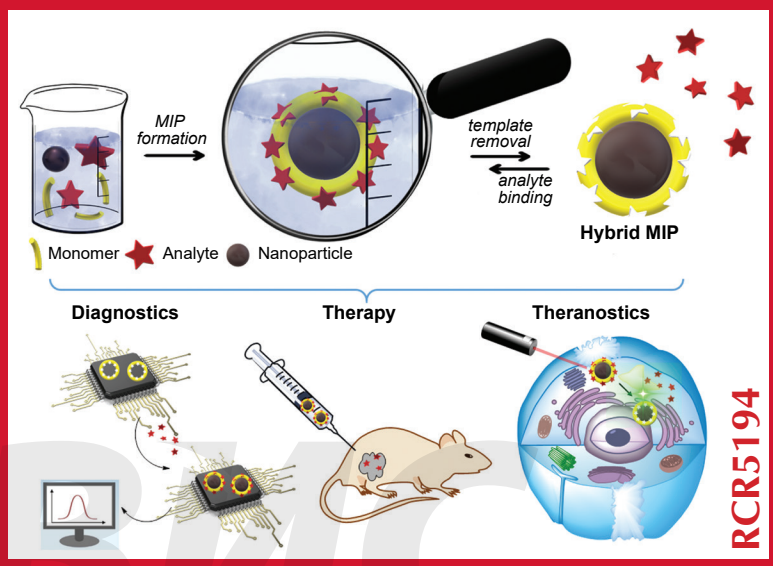

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KDM2 lysine demethylases: structure, functions, and anticancer targets **RCR5212**

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Post-translational modifications of histones, the protein components of nucleosomes, regulate the local state of chromatin for optimal gene expression. Among these modifications, a balance of methylation and demethylation of particular lysine residues in histones is important, as under physiological conditions this balance provides the permissiveness of chromatin for template processes. An imbalance of methylation and demethylation leads to transcriptional deregulation, a characteristic feature of malignant cells. A specific feature of the author's concept is a multidisciplinary approach to the analysis of complex and contradictory data on epigenetic regulators. This review presents general information about human histone lysine demethylases (KDM). For the KDM2 subgroup, structural features, mechanism of catalysis (histone demethylation), and the role in tumour biology are considered. Since KDM2 functions are not limited to enzymatic activity, the pharmacological approach for anticancer therapy implies both the design of demethylation blockers, with KDM2 being retained in the cells, and the search for possible tools for total elimination of these proteins.
Bibliography — 174 references.