# A journey through the anticancer properties of cyclometalated complexes

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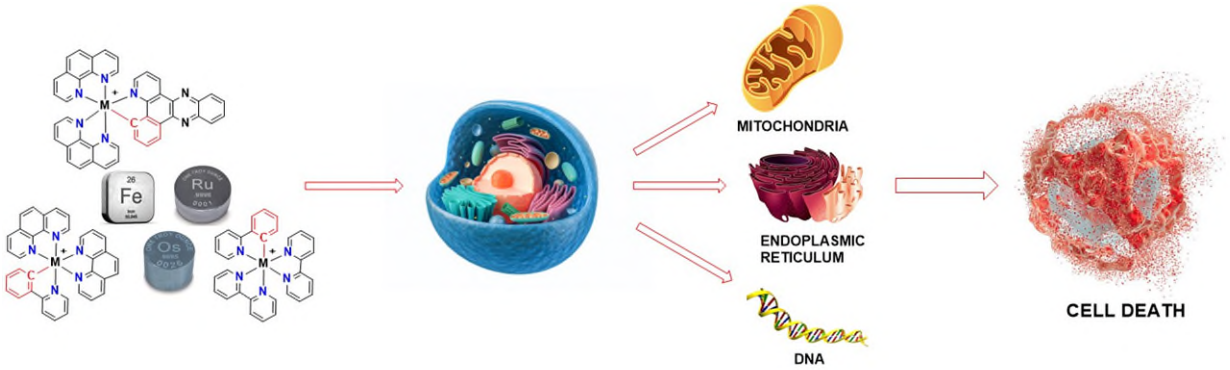
Our research team has been studying iron, ruthenium, and osmium metallacycles as a new class of potent anticancer agents. The impact of these organometallic derivatives on various biological targets has been evaluated, revealing modes of action different from those of clinically approved platinum-based drugs.[1,2] For example, the cell death can be independent of DNA damage, whereas the metalacycles can affect the activity of redox enzymes, induce endoplasmic reticulum stress and alter the glutathione metabolism. On the other hand, ruthenium and osmium complexes showed distinct responses towards resistance mechanisms by ABCB1 and EGFR.[3] Furthermore, the anticancer activity of complexes bearing metalated π-expansive ligands could remarkably be increased through the formation of singlet oxygen upon irradiation by visible light.[4] Such results underscore the potential of our complexes as promising therapeutic multitarget alternatives, potentially bypassing tumor resistance mechanisms.




1 G. Riegel *et al*., *Cancer Lett*., 2024, **585**, 216671
2 M. I. Murillo *et al., Front. Chem.*, 2022, **10**, 967337
3 C. Licona *et al.*, *Inorg. Chem. Front.,* 2020, **7**, 678
4 J. A. Solis-Ruiz *et al.*, *J. Inorg. Biochem.* 2020, **208**, 111080