Azobenzenes-based metal complexes photoisomerization: A new promising approach in PACT.

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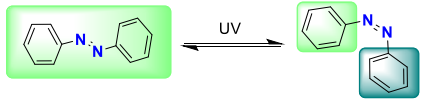
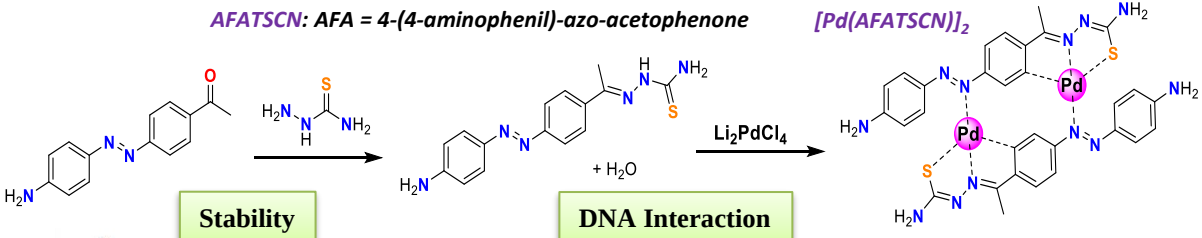
Currently, there are antitumor therapies that use irradiation as a method of activating chemical compounds to increase their activity and thus control them within the system. Photoactivated chemotherapy (PACT) is of particular interest, since it allows this control in drugs temporarily and spatially.(Sadler et al. *Angew. Chem.* **2020**, *132*, 61) An alternative in the development of metal-based antitumor drugs is the formation of complexes containing ligands with "*cis/trans*" photochemical isomerization capacity due to the presence of the azo group (-N=N-).(Merino et al. *Beilstein J. Org. Chem.* **2012**, *8*, 1071)

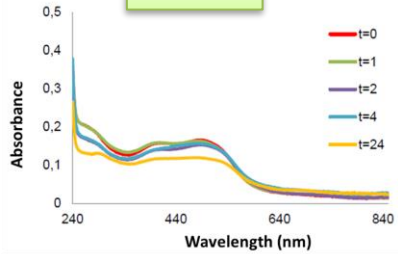


Our group have used thiosemicarbazone (TSCN) which are a well-known family of bioactive ligands to obtain new promising antitumor complexes.(Matesanz et al. *ChemBioChem.* **2020**, *21*, 1) Thus, we propose a new design approach which combines PACT with the photoisomerization capacity of azobenzenes and the biological properties of TSCN in the same structure.

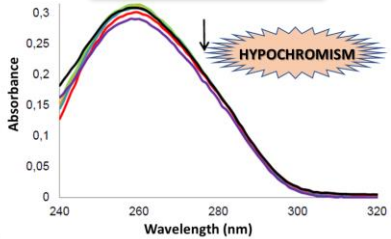
***AFATSCN*: AFA = 4-(4-aminophenil)-azo-acetophenone** **$[Pd(AFATSCN)]_2$**

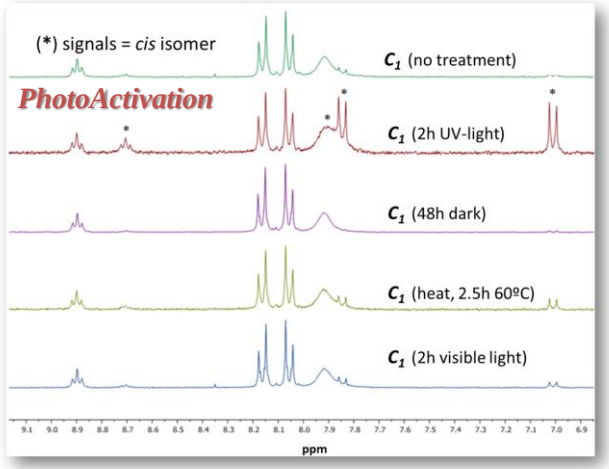


Stability

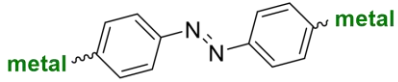


DNA Interaction





NEW APPROACH!!



The photoactivation of the Pd-complex was not observed, probably due to the lack of flexibility in the final structure because the azo group participates in the coordination

ACKNOWLEDGEMENTS: Finantial support by Ministerio de Economía y Competitividad (Project: PID2019-106220RB-I00) and MetDrugs network (RED2018-102471-T).