

Title: Cyclometallated platinum (II) and platinum (IV) compounds: synthesis and characterization

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In the 60s, one of the compounds most commonly used in the fight against cancer, cisplatin, was discovered. Currently, it still has no rivals in this role. However, cisplatin has a considerable amount of side effects and thus, there is enough room for improvement in this area.

Many cyclometallated compounds such as cycloplatinates and cyclopalladates, among others, also have good anticancer properties which makes them very appropriate as potential improvements for cisplatin.

The objective of this work is to develop synthetic methods in order to find alternatives with fewer side effects and with a similar or higher efficiency. Specifically, some cycloplatinated compounds will be studied.

Platinum (II) cyclometallated compounds have been synthesized as well as their platinum (IV) analogues based on various iminic ligands with the potential to form compounds [C, N, N'] and [N, C, N], which have been the concrete study objective of this work. These syntheses have been carried out using different methods to find the one with the highest performance and maximum effectiveness.

[C, N, N'] and [N, C, N] compounds have a platinum center linked to two donor atoms (nitrogen in this case) and a carbon atom. The following figure shows the three examples of platinum (II) cycloplatinated compounds successfully synthesized in this work.

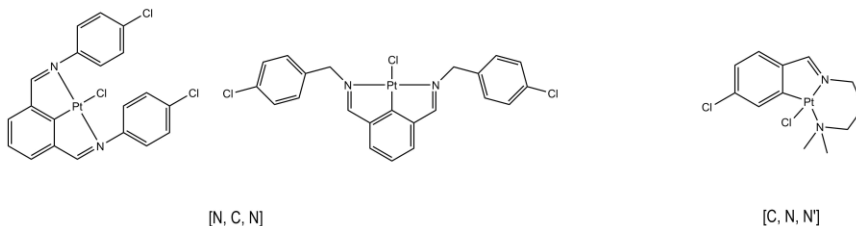


Figure: Cyclometallated platinum (II) [N, C, N] and [C, N, N'] compounds

Analogues cyclometallated platinum (IV) compounds have also been prepared.

All the new compounds have been characterized by several techniques.

Keywords: Cyclometallated, [C, N, N'] compounds, [N, C, N] compounds, platinum, iminic ligands.