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New thiourea-thiazolidine complexes and study of their biological activity

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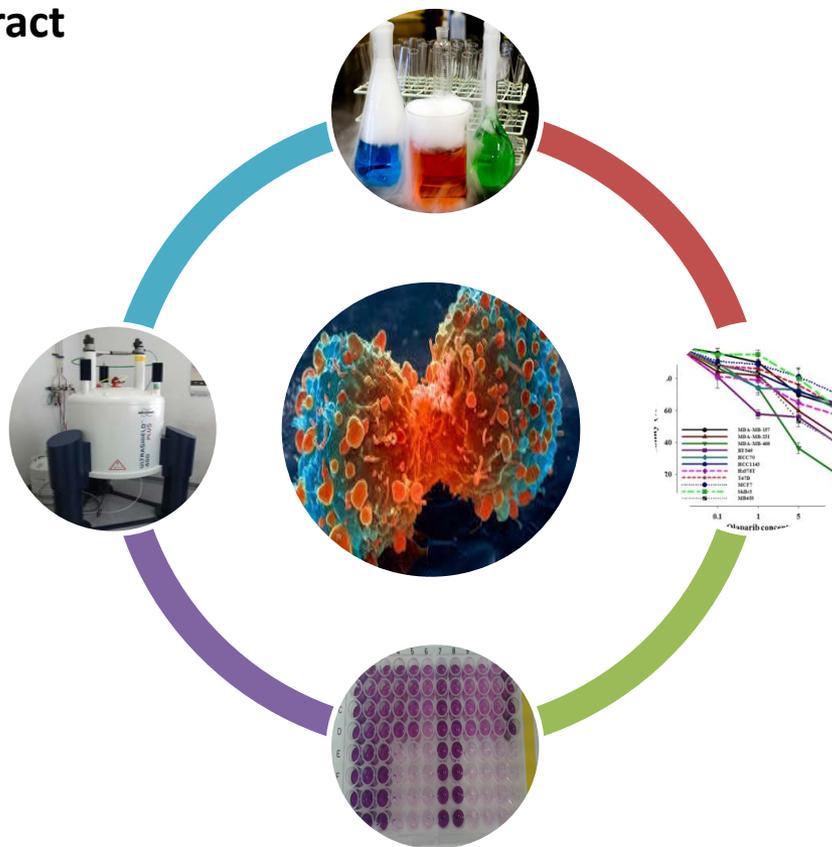
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New thiourea-thiazolidine complexes and study of their biological activity

Graphical Abstract



Abstract:

Urea and thiourea scaffolds have been successfully used in drug design in recent years⁽¹⁾. The formation of thiazolidines by reaction of propargyl amine with isothiocyanates under harsh conditions has been previously reported. Also, these new molecules have attracted great attention because their biological activity⁽²⁾. The coordination with different metals like gold or silver seem to show a better biological activity⁽³⁾.

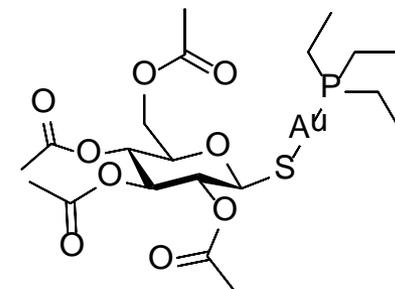
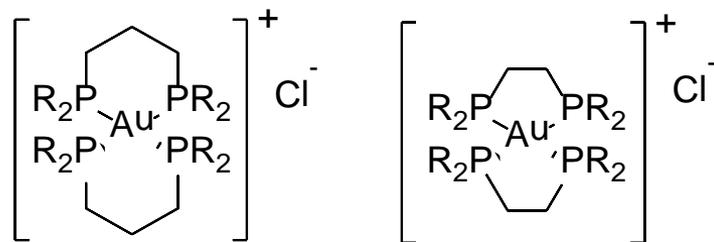
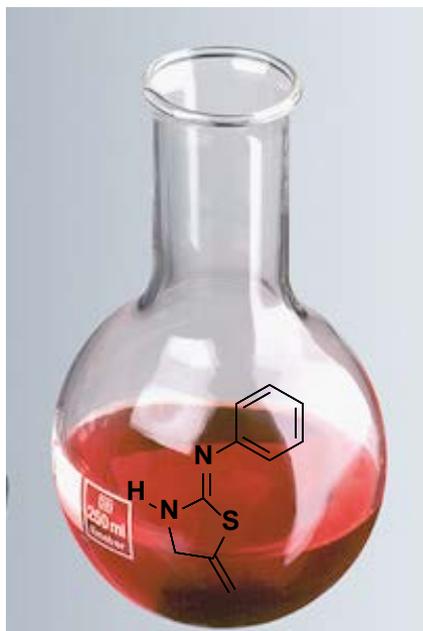
Thiourea-thiazolidine compounds have coordination atoms such as sulfur and nitrogen where metal atoms can be linked, improving their biological activity. On the other hand, these atoms could work recognizing different target cells leading to higher selectivity for these compounds.

Finally, these compounds were tested with HeLa cells through the MTT assay. Only silver compounds showed good cytotoxic values as anticancer compounds. Gold compounds have lower IC_{50} valuables than their respective organic ligands, but more studies should be perform to improve the complexes in order to developed better candidates for the treatment of cancer.

Keywords: Thiourea-thiazolidine; gold, silver.



Introduction



Biochemical Pharmacology (2007), 74, 992-1002



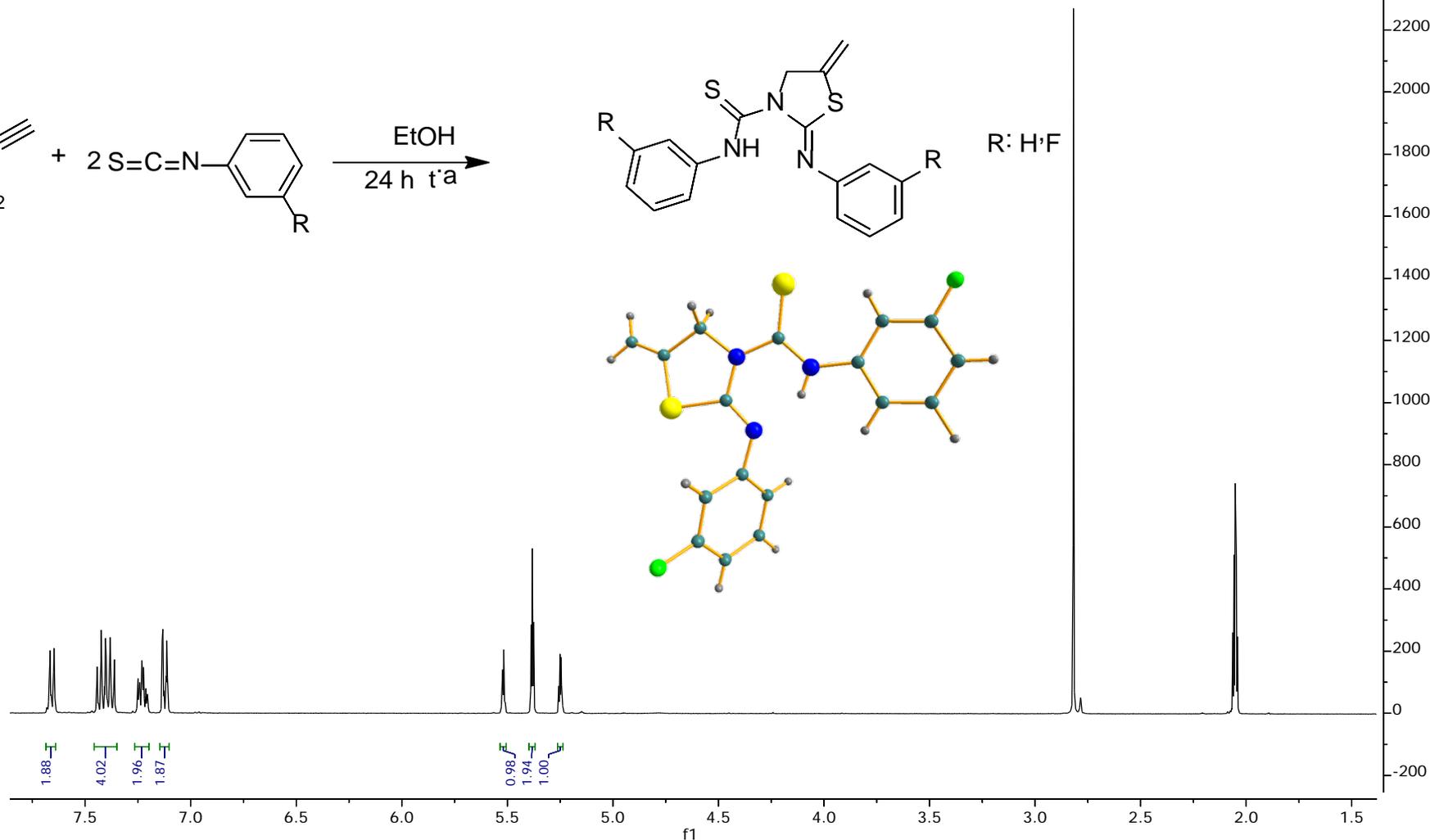
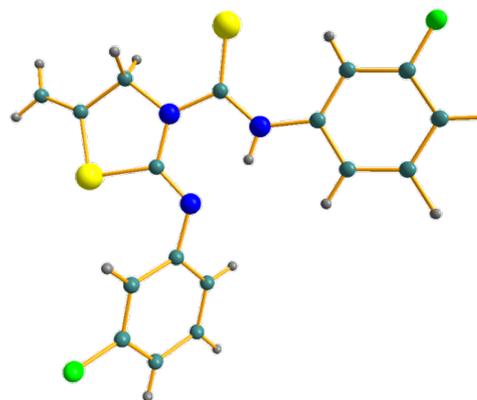
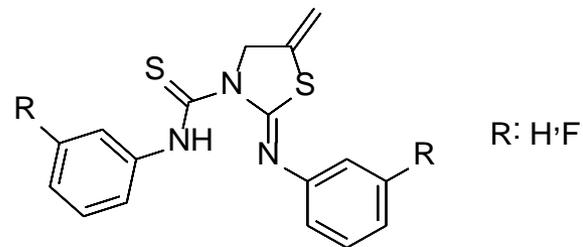
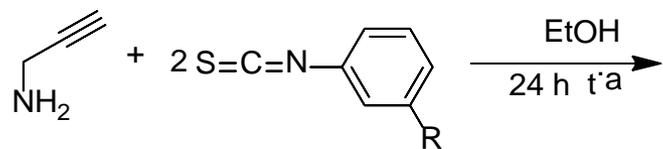
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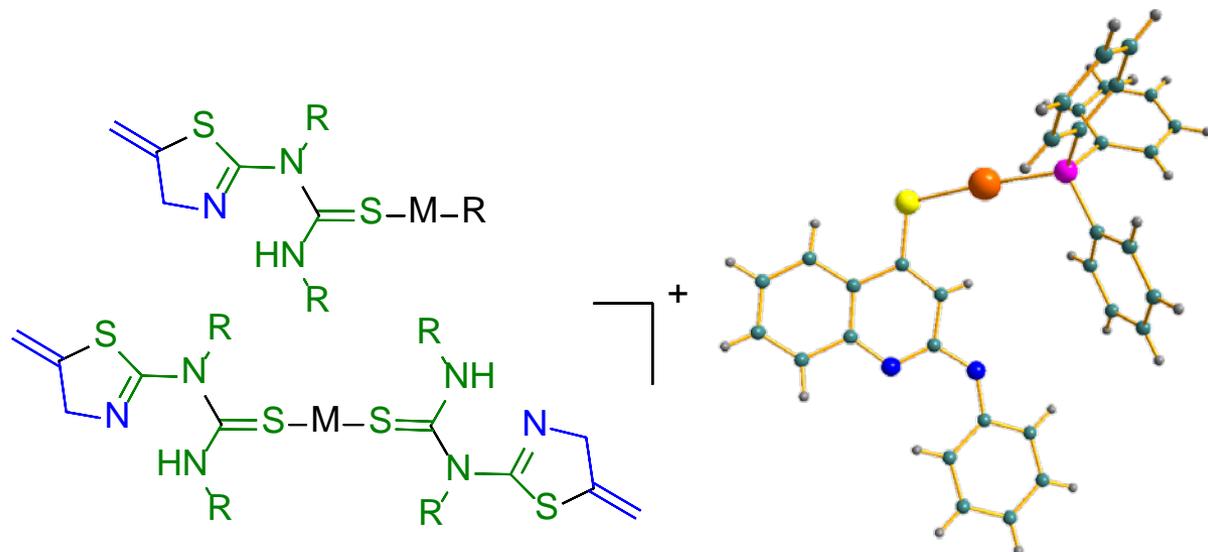
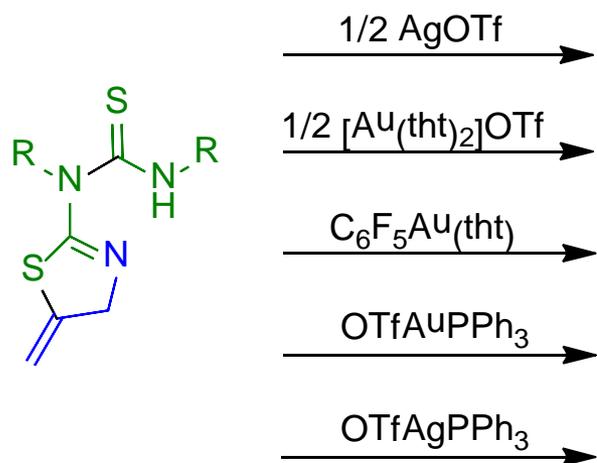


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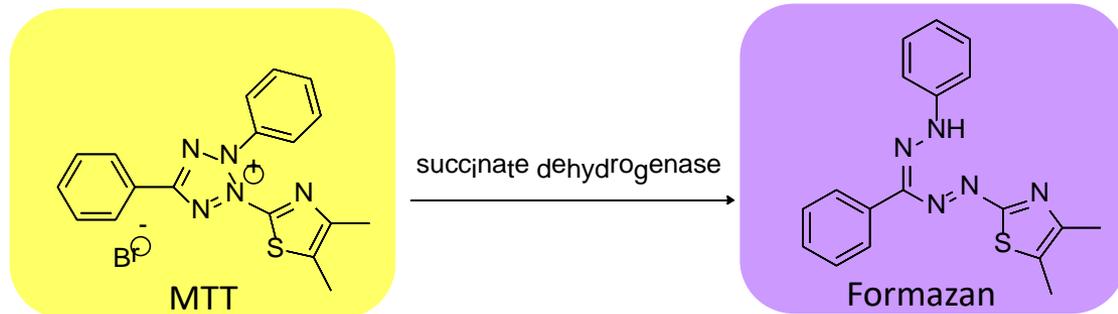
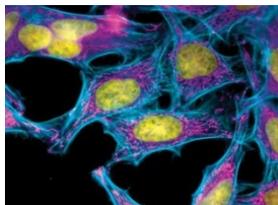
Results and discussion



Results and discussion



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Concentration

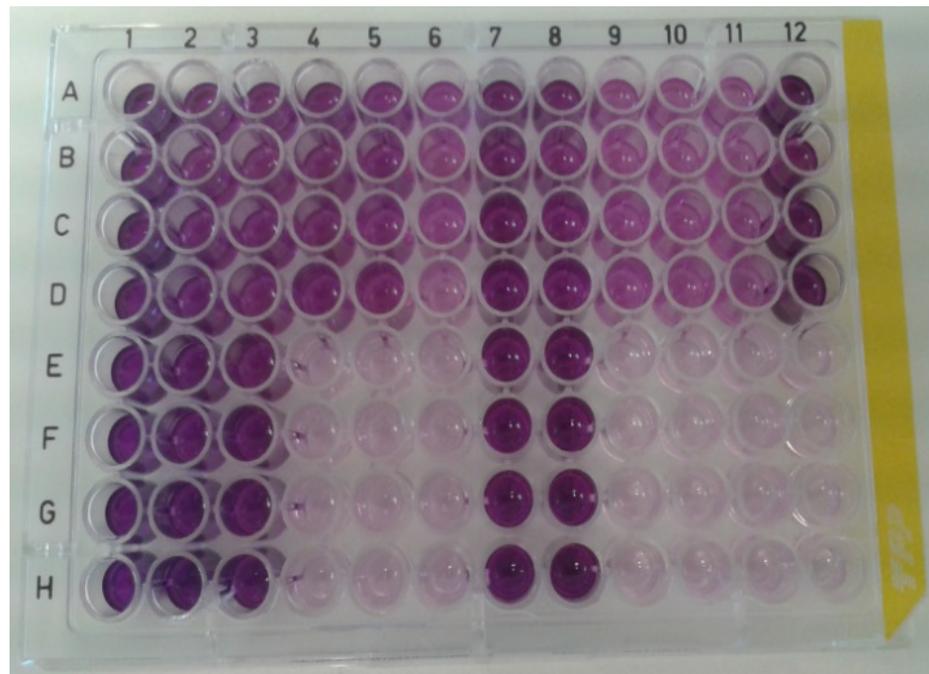
1.25 μM

5 μM

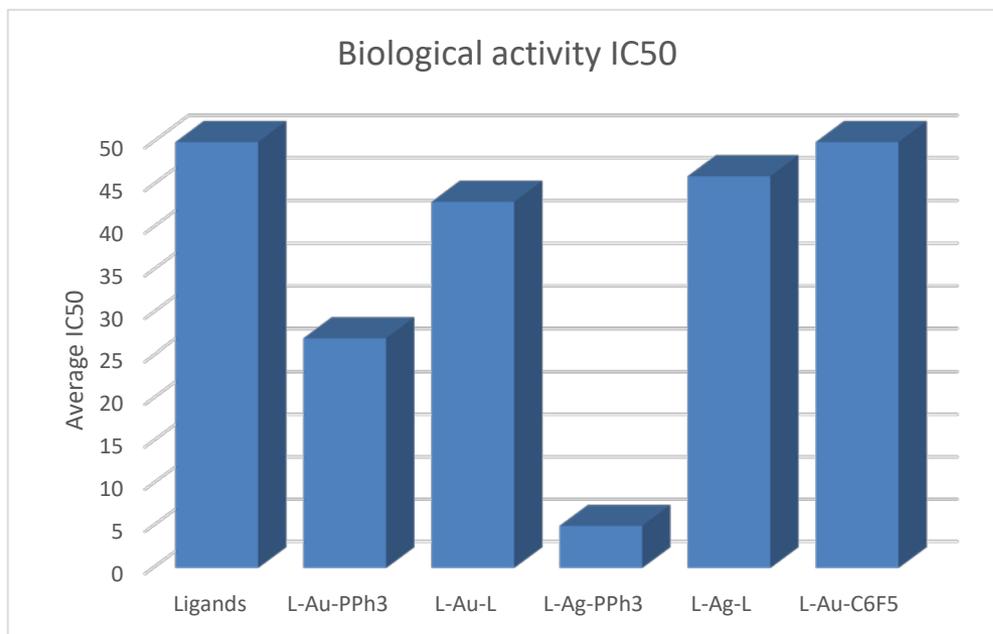
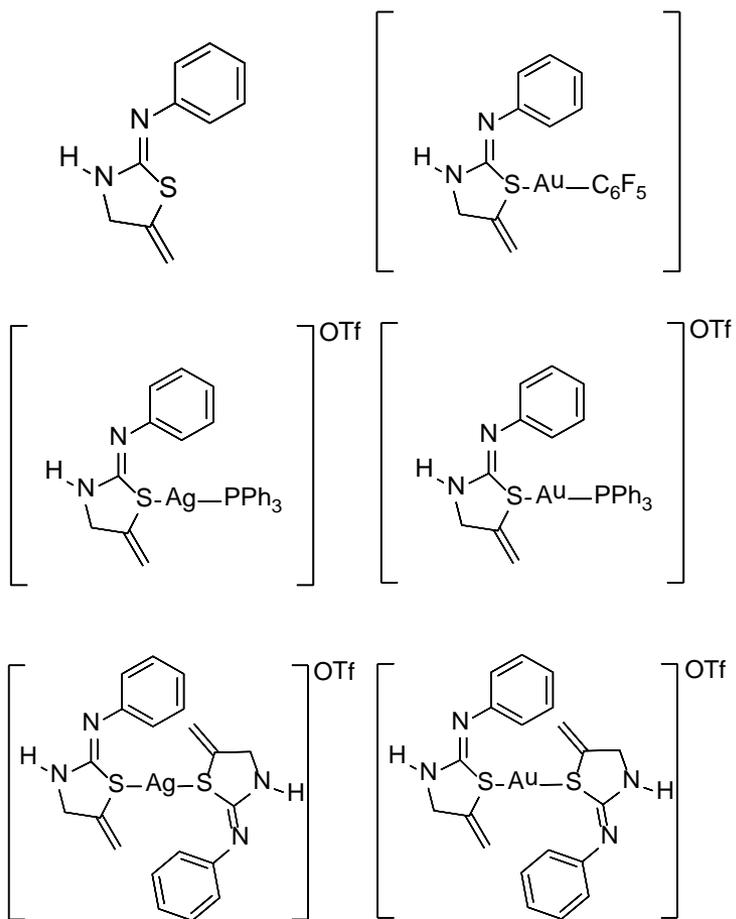
25 μM

50 μM

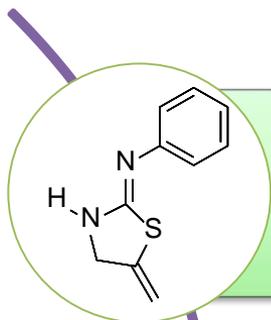
100 μM



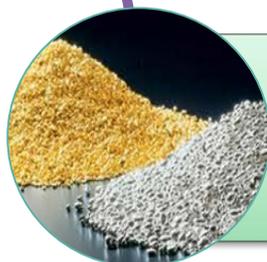
Results and discussion



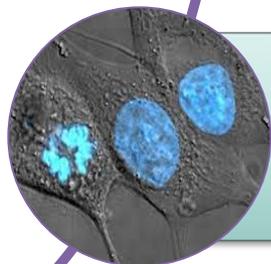
Conclusions



Thiazoline-thiazolidine compounds were synthesized.



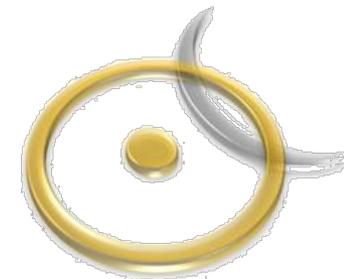
Organic molecules were coordinated with metal atoms such as silver and gold.



New complexes were tested through MTT assay.
Silver compounds showed good cytotoxic values as anticancer compounds



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