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TOOLS FOR THE ASSESSMENT OF THE RESPONSE OF OVARIAN CANCER CELLS TO GOLD CYTOTOXIC COMPOUNDS

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ABSTRACT
Gold compounds are increasingly studied as potential anticancer agents because of their structural diversity and promising biological activity. This project aims to investigate how different gold compounds affect the metabolism of ovarian cancer cells. Four gold compounds were selected for this study: AF, AuTM, and two gold(I) carbenes (CN1 = Au(NHC)Cl and CN2 = $[Au(NHC)_2]PF_6$).
The human ovarian cancer cell lines A2780 and SKOV-3 were treated at their respective IC_{50} concentrations, and ^{1}H NMR metabolomics was performed on cell lysates and culture media after 24 h and 48 h. Metabolites assignment and quantification were followed by the development of computational approaches aimed to explore possible relationships between chemical structure and biological response, despite the different basal metabolism of the two cell lines[1].
The proposed approach may have broader applicability to the screening of metal-based drug candidate libraries, which is always complicated by their multitarget nature, and could support the comprehensive interpretation of their metabolic actions.

Reference

1.Ghini, V. et al. (2025)’ Novel NMR-Based Approach to Reveal the 'Metabolic Fingerprint' of Cytotoxic Gold Drugs in Cancer Cells’, *Journal of Proteome Research, 2,* 813-823. doi: 10.1021/acs.jproteome.4c00904.