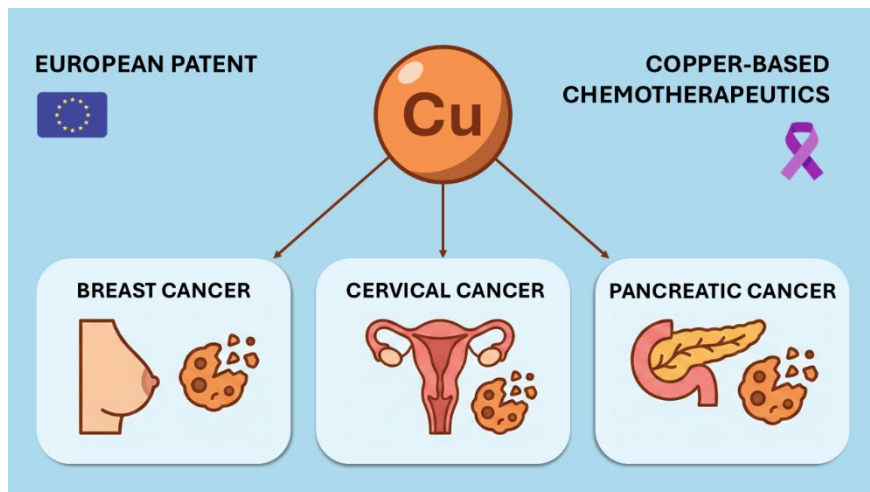


Technology Offer

CSIC/DT/019

Copper–Thiourea Anticancer Complexes with Enhanced Potency and Reduced Toxicity



Copper complexes with thiourea ligands have demonstrated high cytotoxic activity against tumor cells, along with low toxicity in murine models. Furthermore, these complexes exhibit high stability under physiological conditions.

Intellectual Property

Priority patent application filed

Stage of development

Advanced preclinical development: *in vitro* and *in vivo* efficacy and acute toxicity completed in murine models.

Intended Collaboration

Licensing and/or co-development

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Market need

Nowadays, cancer remains the leading cause of mortality worldwide. Different therapeutic approaches coexist—including surgery, chemotherapy, radiotherapy, immunotherapy, hormone therapy, and stem cell transplantation—which are used either as monotherapies or in combination with other techniques. Among these, chemotherapy is a treatment modality that employs chemical compounds to target malignant cells. However, these agents not only destroy fast-growing cancer cells but also affect healthy ones. The next step in the evolution of cancer treatment is to enhance the discrimination of cancer cells from healthy cells through the development of highly selective anticancer drugs.



Proposed solution

Copper is an essential endogenous metal in the human body; it is highly active in various types of cancer and exhibits excellent biocompatibility.

Copper compounds with thiourea ligands have demonstrated superior antitumor activity, both *in vitro* and *in vivo*, positioning them as a highly promising alternative to conventional cancer therapies.

This potent cytotoxic activity against tumor cells, coupled with low toxicity in murine models and high stability under physiological conditions, further enhances their therapeutic potential and clinical interest.

Competitive advantages

- Copper is particularly biocompatible and it is highly active against several types of cancer (breast, cervical, and pancreatic).
- Copper complexes with thiourea ligands have demonstrated superior antitumor activity, both *in vitro* and *in vivo*.
- These compounds exhibit potent cytotoxicity against tumor cells and low toxicity in murine models via both oral and intraperitoneal administration.