

COPPER COMPOUND FOR THE TREATMENT OF OVARIAN CANCER



The present invention is a nanomaterial containing a pharmaceutical composition based on copper (II) nitroprusside (CuNP) for use in the treatment of cancer. The CuNP molecule has the ability to generate multiple ROS (Reacting Oxygen Species) in cancer cells causing their death by the alteration of cellular physiology. This composition is indicated for tumors such as ovarian and breast carcinoma and glioblastoma.



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KEYWORDS:

Anti-Cancer, Chemodynamic Therapy, copper nitroprusside, ovarian cancer, Reacting Oxygen Species.



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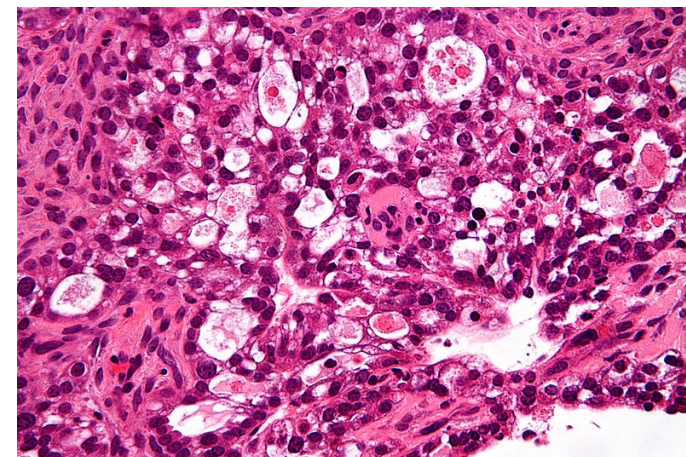


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DESCRIPTION

Free radicals are highly reactive and electrically unstable molecules or individual atoms that attempt to stabilize by stealing the needed electron to equalize its electrical charge from neighboring atoms. This mechanism gives rise to a chain reaction that, if not stopped in time, can damage cellular structures. Well-known free radicals are Reacting Oxygen Species, which in the presence of free transition metals (such as copper) produce particularly toxic radicals responsible for functional degradation even of the cell membranes. It has been found that the copper nitroprusside radical (CuNP) can cause this chain of oxidizing activities at tumor sites, becoming selectively highly toxic to various cancer cells, while being biocompatible with normal cells. CuNP nanoparticles can be used for Chemodynamic Therapy.



APPLICATIONS

- Treatment of ovarian, breast carcinomas and glioblastomas.

ADVANTAGES

- Can be used in the treatment of solid forms of cancer;
- High selectivity;
- Nontoxicity.

