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Design, synthesis, characterization and biological studies of ruthenium and gold compounds with anticancer properties

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Stellingen (Propositions)

Behorende bij het proefschrift

Design, Synthesis, Characterization and Biological Studies of Ruthenium and Gold Compounds with Anticancer Properties

Ariadna Garza-Ortiz

1) To fully explore the development of the novel, powerful cytotoxic compounds a strong collaboration among chemists, biochemists, pharmacologists and physicians is crucial.
   This thesis

2) For the purposeful design of novel metal-based therapeutics, turning a designed compound into a drug-like molecule is a significant challenge, and in this process the design of compounds with well-defined absorption, distribution, metabolism and excretion mechanisms is crucial.
   This thesis

3) The family of Au(III)-2-(arylazo)pyridine compounds are high-potential antitumour drugs due to their promising cytoxic activity; moreover, they overcome cisplatin-resistance.
   This thesis.

4) When studying the biological activity of coordination compounds, the need of performing such tests also for the free ligands should be stressed.
   This thesis

5) The Ru(III) bis(arylimino)pyridine compounds, which are easily chemical modified, are suitable starting materials for the synthesis of novel mononuclear Ru(II) species.
   This thesis

6) The chemical structure of the most cytotoxic compound, RuL2, (trichlorido(2,6-bis(2,6-diisopropylphenyliminomethyl)pyridine)ruthenium(III)), suggests that both steric and electronic factors could be determinant in the biological activity; these factors need to be further explored.
   This thesis.

7) Capillar electrophoresis for the investigation of metallodrug metabolism, biotransformation and binding behaviour must be applied under physiological conditions in order to provide accurate information.
   J. Cuadrado, W. Zhang, W. Hang, V. Mahidi.J. Environ. Monit. 2 (2000) 355-359.
   Z. Huang, A. R. Timerbaev, B. K. Keppler, T. Hirokawa. J Chromatogr. A 1106 (2006) 75-79.

8) The epidemic of rising costs and blurred objectives that clinical trials are facing is discouraging in the testing of new medical treatments.
   See e.g. special issue Science 322 (2008).

9) For optimal cancer care, treatment by multidisciplinary teams specialized in specific organ sites are extremely important.
   See e.g. M.H. N. Tattersall, H. Thomas. BMJ. 318 (1999) 445–448.

10) Cancer prevention should become an integral part of worldwide cancer control.
    See e.g. S.-Y. Sun, N. Hail Jr., R. Lotan. J. Nat. Cancer Institute. 96 (2004) 662-672.

11) When using cell lines in biological studies, one should be aware of the fact that, cross-contamination or misidentification of cell lines is a high risk.
    See e.g. I. R. I. Freshney, editorial. 2008. Expert. Rev. Anticancer. Ther. 8(3) 311-314.

12) In scientific research, it is often forgotten that negative results may also be very important and that relevant discoveries may be behind it.

13) Our health and that of our children depends on the health of the environment. We must continue to do everything we can to protect it; after 23 years not really big improvements have been achieved.
Erick Chivian Nobel Prize Winner 1985

14) Not enough people appreciate the fact that one of the most sublime experiences we can ever have is to wake up feeling healthy after we have been sick.
See e.g. Rabbi Harold Kushner

15) When pursuing a research project, choose the topic you really like, because from start to finish you will devote a substantial amount of your “free” time to this endeavour.
W. P. Naylor, C. A. Munoz-Viveros. J. Contemp. Dent Pract. 6 (2005) 164-180.

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