Investigation of Electron-Impact Cross Sections of *cis*- and *trans*-diamminedichloridoplatinum(II)

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Cisplatin (*cis*-diamminedichloridoplatinum(II)) is one of the most leading drugs used in anticancer chemotherapy. In stark contrast, its *trans*-isomer is clinically inactive [1]. Chemotherapy is often combined with radiotherapy in order to mutually enhance the effectiveness of the two treatments. Then, products of ionizing radiation such as electrons interacts not only with the biomolecular environment but also with the administered drugs. Electron-impact ionization processes are among the dominant processes for electron-molecule scattering phenomena. Data on the latter are required as input for modeling the ionizing radiation interaction with cells using e.g. Monte Carlo track structure simulations [2, 3]. In this contribution, we present and compare calculated electron-impact ionization cross sections (EICSs) for *cis*- and *trans*-platin. We use the Deutsch-Märk as well as the binary-encounter-Bethe methods to derive total EICSs, compare the results obtained with the two theoretically differently-based numerical schemes and put them into perspective regarding earlier theoretical investigations on electron-impact ionization processes involving platinum-based anticancer agents [4-6]. Finally, we discuss an empirical scheme to derive partial cross sections from the total ones.

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