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Evaluation of Cisplatin, Doxorubicin and Paclitaxel Inactivation Using Asepto 75™ 0.5 %, Sodium Hypochloride 10 % and Sodium Thiosulfate 10 % by High Performance Liquid Chromatography (HPLC) and *In Vitro* Cytotoxicity Test

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***SUMMARY*. Antineoplastic agents are considered risk drugs; that is, they can cause harmful effects, such as genotoxicity, carcinogenicity, teratogenicity, as well as fertility alterations, therefore being the exposure of health professionals to these substances considerably worrying. These medicaments must be submitted to physical, chemical and biological analyses, what generates a considerable volume of residues, what also requires treatment. The aim of this work was to evaluate the efficacy of different methods of inactivation concerning cisplatin, doxorubicin and paclitaxel, using high performance liquid chromatography and *in vitro* cytotoxicity test. The results demonstrated that Asepto 75™ is efficient for chemical and biological inactivation of the three drugs, being the exposure time determinant for cisplatin chemical degradation. Cytotoxicity levels varied from none to slight. In spite of its own degree of cytotoxicity, sodium hypochloride was also effective in the chemical inactivation of the three drugs. Sodium thiosulfate degrader, however, was only effective concerning cisplatin chemical inactivation, presenting no effect on doxorubicin or paclitaxel. The results of the *in vitro* tests were compatible with those from the chemical evaluation. It can therefore be concluded that the inactivation of cytotoxic drugs prior to waste effectively reduces occupational and environmental risks.**

KEY WORDS: Inactivation, Cytotoxicity, Chromatography.

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