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Title: ERCC1 and MDR1 expression and polymorphism frequency related to clinical outcome and chemotherapy response in a Brazilian sample of NSCLC patients

Prof. Dr Lair 2782 Zambon lzambon@fcm.unicamp.br MD [1], Dr. Ana Paula 2783 Salles Perroud Ana.Paula.Perroud@biogenidec.com MD [1], Dr. Maurício 2784 Toledo Leme maualeme@hotmail.com MD [1], Prof. Dr Eduardo 2785 Mello De Capitani capitani@fcm.unicamp.br MD [1], Dr. Maurício 2786 Wesley Perroud, Jr. mauricioperroud@gmail.com MD [1], Dr. Aristóteles 2787 Souza Barbeiro abarbeiro@gmail.com MD [1], Ms. Bruna 2788 Alonso Saad brunasaad89@yahoo.com.br [1], Prof. Dr José 2789 Vassalo vassallomeister@gmail.com MD [2], Prof. Dr André 2790 Morcillo morcillo@fcm.unicamp.br MD [3], Prof. Dr Daniel 2791 Botelho Costa dbcosta@bidmc.harvard.edu MD [4] and Mrs. Helen 2792 Naemi Honma helen@fcm.unicamp.br [1]. [1] Internal Madicine, State University of Campinas, Campinas, São Paulo, Brazil, 13083-887 ; [2] Pathology, State University of Campinas, Campinas, São Paulo, Brazil, 13083-887 ; [3] Pediatrics, State University of Campinas, Campinas, São Paulo, Brazil, 13083-887 and [4] Hematology/Oncology, Beth Israel Deaconess Medical Center, Boston, MA, United States .

Body: Introduction: Excision repair cross-complementation group 1 (ERCC1), seems to play a significant role in platinum-DNA adduct repair. Multidrug resistance (MDR1) plays an important role in chemo resistance to many drugs, including platinum derivatives. Although resistance to chemotherapy is caused by multiple genetic factors, DNA repair genes play a key role in platinum derivatives resistance. Aim: The purpose of this study was to estimate and compare the genotype frequencies, and the protein expressions of ERCC1 and MDR1 (exon 26), in a Brazilian sample of NSCLC patients, correlating the results with clinical outcome and response to platinum derivatives. Materials and Methods: Genomic DNA of 79 NSCLC patients were collected, and the ERCC1 C8092A and MDR1 exon 26 polymorphisms were detected by PCR-SSCP, followed by sequencing to confirm the genotyping. The immunohistochemistry for ERCC1 and MDR1 were performed on 70 lung biopsies paraffin blocks; the polymorphism genotyping and the protein expressions results were then correlated with clinical outcome and response of chemotherapy. Results: There was no correlation of clinical outcome with the polymorphism genotypes and expressions of ERCC1 and MDR1.There was no correlation of polymorphism genotype and protein expression with response to chemotherapy. Conclusions: This study suggests that ERCC1 C8092A and MDR1 (exon 26) polymorphism genotypes, and their respective protein expression did not correlated with response to chemotherapy or clinical outcome.