Gene and protein expression in the oxaliplatin-resistant HT29/L-OHP human colon cancer cell line

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ABSTRACT. Oxaliplatin (L-OHP) is one of the most commonly used anticancer drugs in adjuvant treatment of colon cancer after complete resection of the primary tumor and treatment of metastatic colorectal cancer. Cancer cells eventually become resistant to L-OHP, which diminishes its curative effect. However, the mechanism of action of L-OHP remains unknown. In this study, an L-OHP-resistant human colon cancer cell line, HT29/L-OHP, was established by gradually increasing the dose of L-OHP in culture. The expression levels of the tumor susceptibility gene 101 (tsg101) and the TSG101 protein in HT29 and HT29/L-OHP cell lines were examined by reverse transcription-polymerase chain reaction and western blot analysis. In addition, the expression levels of several apoptosis-regulating protein markers were determined using immunohistochemistry-staining assays. We found that the expression of tsg101 mRNA and of TSG101 protein were
significantly higher in the HT29/L-OHP cell line than in its parent, HT29 (P < 0.05). In addition, the expression of multiple apoptosis-regulating protein markers were significantly increased (P < 0.05) in the HT29/L-OHP cell line. These data suggest that these markers could be useful as predictive markers for evaluating and comparing the efficacy and molecular pharmacology of chemotherapeutics.

**Key words:** Human colon cancer cells; Multi-drug resistance; Oxaliplatin