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# BIOLOGICALLY ACTIVE ALKALOIDS FROM THE ROOTS OF *TAXUS BACCATA L.* GROWING IN GEORGIA

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Gen. Taxus L. (Fam. Taxaceae) is famous as the sources of the natural cytostatic medical preparation for Paclitaxel (Taxol), which has a high anticancer activity. *Taxus baccata L.* is the only one species of Taxus, which is widespread in Georgia. Cytotoxic activity of the alkaloids from the bark and the leaves of T. baccata was studied "*in vitro*" tests, using the cells: A-549 (lung carcinoma), DLD-1 (intestinal adenocarcinoma), WS-1 (human fibroblasts). The aim of the research was to study content of Taxol and other alkaloids in roots of Taxus baccata. For deriving of the alkaloids from the row material was used the method of liquid-liquid extraction. Based on experimental researches, the main alkaloids are taxol and karakoline in the sum of alkaloids from the roots of Taxus baccata grown in Georgia. The cytotoxic activity of the taxol containing alkaloids, obtained from the roots of Taxus baccata, was studied at the department of fundamental sciences of the University of Quebec at Chicoutimi (Canada). Cytotoxic activity of the alkaloids was studied "*in vitro*" tests, using the cells: A-549 (lung carcinoma), DLD-1 (intestinal adenocarcinoma), WS-1 (human fibroblasts). On the base of the researchers is shown that the substance reveals 50% inhibition of cancer cell cultures: A-549 (lung carcinoma), DLD-1 (intestinal adenocarcinoma), WS-1 (human fibroblasts). Standard was etoposide.

Cytotoxic activity of alkaloids from the roots of *Taxus baccata L.*

| Plant | Vegetative organ | Alkaloids | Tumor cells cultures and methods | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Resazurine | | | Hoechst | | |
| | | | A-549 µg/ml | DLD-1 µg/ml | WS-1 µg/ml | A-549 µg/ml | DLD-1 µg/ml | WS-1 µg/ml |
| T. baccata | roots | Taxol, Karakoline | 5±1 | 5±2 | 112±10 | <1,563 | 2,4±0,6 | 9±3 |
| Etoposide | | | 24±4 | 10±2 | 35±16 | 2,1±0,3µM | 2,1±0,3µM | 31±14µM |

Cytotoxic studies show, that the sum of alkaloids from the roots of Taxus baccata shows specific cytotoxic activity in tumor cells: A-549 (lung carcinoma), DLD-1 (intestinal adenocarcinoma), WS-1 (human fibroblasts).

## BIOGRAPHY

Kintsurashvili L has completed her PhD at the age of 39 years from I. Kutateladze Institute of Pharmacochemistry (Georgia). She is a senior scientist of TSMU Iovel Kutateladze Institute of Pharmacochemistry. She has published more than 80 publications in reputed journals, the author of 2 patens. She is a member of organizing committee of several international conferences and meetings.

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