



Anticancer derivatives of usnic acid

About the invention

The invention concerns the development of new chemical compounds, derivatives of usnic acid named Raj-415 and Raj-432, obtained by chemical synthesis. They possess **antiproliferative activity** against cancer cells of various origins, even at low concentrations. In addition, these compounds induce characteristic changes in cancer cells involving strong vacuolization, contributing to cancer cell death. In cytotoxicity tests, Raj-415 and Raj-432 compounds were shown to inhibit the viability of all cancer cell lines tested, i.e. breast cancer cell line MCF-7, cervical cancer cell line HeLa and prostate cancer cell line PC-3, while having no cytotoxic effect on healthy human fibroblast cells HDFa.

Usnic acid is a well-known biologically active compound isolated from lichens, characterized by a wide spectrum of effects on living organisms, both plant and animal, as well as humans. It exhibits a wide range of properties such as **antiviral, antifungal, antimicrobial, antiprotozoal and immunomodulatory**.

Its activity is also known:

- photoprotective,
- anti-inflammatory,
- analgesic
- and antipyretic.



TRL 4

Authors

A team of scientists from the UG Department of Biology and the University of Sydney:

prof. dr hab. Anna Herman-Antosiewicz
dr Beata Guzow-Krzemińska
dr inż. Agnieszka Pyrczak-Felczykowska
prof. Michael Kassiou
dr Rajeshwar Narlawar

IP protection

The invention is protected by a Polish patent **Pat.233080**

Possible cooperation

- Licensing agreement
- Transfer of ownership
- Partnership in order to further research or commercialization

Sectors

- Biotechnology market
- Pharmaceutical market

