

Natural Immuno-Modulators from Siberian Plants

Arkady A. Semenov

Irkutsk Institute of Chemistry, Siberian Division RAS, Irkutsk, 664033, Russia
E-mail: admin@irioch.irk.ru

The physiological effect of many traditional medicines is determined by immunic and hormonal systems. Screening of small group of Siberian traditional medicines has revealed their ability of stimulating antiinfection immunity in animals.

Three plant species chosen on the basis of data of traditional folk medicines have been subjected to a detailed chemical and medico-biological examination. These are *Aconitum baikalense*, *Cirsium setosum* and *Saussurea controversa*. One of the subject of investigation, *Scorzonera hispanica* cultivated cells has been found experimentally. Complexes of chemical substances controlling the immunic system functions have completely or in part been revealed. In *Aconitum baikalense* these complexes are represented by phenylethanol derivatives, in *Cirsium setosum* and *Saussurea controversa* these are glucosides of phenylethanol and syringyl derivatives and flavonoid astragalin. The *Scorzonera hispanica* immuno-active complex components belong to a lignan biosynthesis branch and represent glycosides of diarylfurofurans, arylbenzofurans, C₆+C₃-phenols and the products of their catabolism. They differ in chemical structure, but possess general structural features. The 2-glucosyloxy-3,3-dimethoxyphenyl group is suggested to be a pharmacophore responsible for physiological effect.

The immuno-modulators found can control the immune response in both immuno-deficient and auto-immunic pathologies. They have successfully been used for the treatment of benign and malignant tumors, antibiotic-resistant infections, allergies, polyarthrites, thyroid diseases, psoriasis and other pathologies which can be treated with medicines only with difficulty, if any. The capability of these substances of fine controlling functional disorders in certain clones of immune-competent cells related to both humoral and cell sections of the immunic system has been demonstrated with concrete examples. Besides it has been shown that substances from *Saussurea controversa* can serve as adjuvants for anti-infection vaccines.