



## Antibacterial activity of isothiocyanates, active principles in *Brassica nigra* seeds (IV)

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This paper belongs to a more complex study, study that has as aim the emphasize of antibacterial activity of "isothiocyanates" bioactive compounds, compounds present in more vegetable sources (*Armoracia rusticana* and *Brassica nigra*). In this case, the biological material studied, were the *Brassica nigra* seeds. On the basis of kinetics, thermodynamics and pH studied, the optimum conditions corresponding to obtaining the extracts were the following: phosphate buffer pH was 7, reaction time was of 120 ÷ 330 minutes, temperature of 55°C. The emphasize of antibacterial activity of there compounds was done by taking microbiological tests on the following microbiological cultures: *Escherichia coli*, *Candida albicans*, *Bacillus subtilis*, *Staphylococcus aureus*, *Agrobacterium tumefaciens* and *Rhizopus nigricans*, using the inoculate microbiological technique on culture medium surface. After 24 hours of incubation, the ITCs exhibit a average inhibitory action towards to *Bacillus subtilis*, because the free zones around the filter paper with extract (that contain sulphur compounds), have the values in the range 0.2-0.6 cm. *Candida albicans* exhibit a significant sensitivity to words ITCs action, from mustard seeds extracts, the free zone diameters to maximum concentration is 0.7 cm and decreases to the other concentrations, maintaining themselves unchanged after 48 hours, too respectively. In the presence of ITCs from mustard seeds extracts, *Escherichia coli* exhibits a average negative reaction, with free zone diameters in the range of 0.2-0.5 cm. The obtained results have shown a relative antibacterial activity, induced by these compounds, comparing to results obtained in the case of crushed down mustard extracts (results shown in a previous paper). On the base of obtained results, we can infer, that, as a rule, the majority of tested microbial species, present a sensitiveness more or less increased (with some exceptions), which determine us to recommend the utilization of these compounds obtained from seeds mustard, in food and medicine domain.