



Dept. of Pharmacognosy with Medicinal Plant Unit
of Medical University of Lublin

The International Society for the Development of Natural Products
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The Polish Pharmaceutical Society



**7th INTERNATIONAL SYMPOSIUM ON CHROMATOGRAPHY
OF NATURAL PRODUCTS**
joined with
**6th INTERNATIONAL SYMPOSIUM
OF THE INTERNATIONAL SOCIETY FOR THE DEVELOPMENT
OF NATURAL PRODUCTS**

ABSTRACTS

**Lublin, Poland
June 14-17, 2010**

SECONDARY METABOLITES OF STREPTOMYCETES

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Many of new secondary metabolites have been reported from terrestrial streptomycetes, marine-derived actinomycetes and symbiotic bacteria in sponges [1]. The purpose of this work was to search for novel microbial agents, inhibitors of DD-peptidases (EC3.4.16.4), which are microbial secondary metabolites from NIZP-PZH collection of terrestrial streptomycetes strains. DD-carboxypeptidases/transpeptidases are the enzymes involved in peptide cross-linking during the last stage of bacterial cell wall peptidoglycan biosynthesis. In our investigation we screened 118 strains (110 of *Streptomyces*, 8 of *Saccharopolyspora*). They were cultivated in liquid medium and culture supernatants were further examine for the production of DD-peptidase inhibitors and β -lactamases. The production of inhibitors was analyzed by the test of DD-carboxypeptidase 64-575 II inhibition reaction. Activity of β -lactamases was evaluated following the method with nitrocephin. As a result, from the collection of 118 strains 21% produced DD-peptidase 64-575 II inhibitors, 27% produced β -lactamases and 8% produced both activities. Streptomycetes strains which represented both activities belong to the following species: *S.erythrochromogenes*, *S.lavendulae*, *S.phaeochromogenes*, *S.badius*, *S.niveus* or *Saccharopolyspora erythrea*.

Acknowledgements: This work was financially supported by EU, Ministry of Regional Development, UDA-POIG.01.03.01-14-136/09-00

References:

- [1] Berdy J.: Bioactive microbial metabolites. *J.Antibiot.*, 2005, 58, 1-26

THE INFLUENCE OF DIFFERENT CARBON AND NITROGEN SOURCES ON THE SUBMERGED CULTIVATION OF *STREPTOMYCES* SP. 8812

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Streptomycetes are one of the most important source of antibiotics for medical use.¹ However secondary metabolites with microbial origin are produced in only discreet amounts. By changing the composition of culture media, it is possible to increase the efficiency of biosynthesis of bioactive metabolites. In our investigation we search for novel antimicrobial agents, inhibitors of DD-peptidases (EC 3.4.16.4), microbial secondary metabolites from our collection of terrestrial streptomycetes strains.

Therefore, different sources of carbon and nitrogen in culture media were used in our study. The best strain growth and biomass accumulation were achieved for media containing glycerol as carbon source and yeast extract, soybean flour, bacto peptone as nitrogen source. The highest productivity of DD-peptidase inhibitors was detected for media containing lactose or glycerol as carbon source and soybean flour, bacto peptone, bacto tryptone, yeast extract and corn steep liquor as a source of nitrogen.

Acknowledgements: This work was financially supported by EU, Ministry of Regional Development, UDA-POIG.01.03.01-14-136/09-00

References:

[1] Chater K.F.: *Phil. Trans.R. Soc.B* 2006, 361, 761-768.