SUMMARY

The effort to find compounds with significant antioxidant properties and with some other
therapeutically useful biological activity (e.g. anti-platelet activity) from the wide group of
sturcturally different naturally occuring compouds (or plant extracts) or their synthetic
derivatives, was the purpose of this work. Radical Scavenging activity of tested compounds
or plant extracts was measured by modified DPPH test use program SIA (sequential injection
analysis). Singificant radical scavenging activity exhibited polyfenols, namely gallic acid
(EC_{50}= 0,0025 ± 0,002 mg/ml) and ethyl-gallate (EC_{50}= 0,0038 ± 0,001 mg/ml). Also the
pure latex of *Croton lechleri* exhibited significantly radical scavenging activity (EC_{50}=0,0347
± 0,018 mg/ml). From the group of tested methylcoumarins, the excelent antioxidant aktivity
exhibited *ortho*-dihydroxy-4-methylcoumarins, espicially 7,8-dihydroxy-4-methylcoumarin
and its derivatives (EC_{50}= 24,9 ± 2,7 μM). Further was the antioxidant activity tested by
FRAP methods modified to used micropalates P 400 μl. This spectrofothometric method
based on ability of compounds to reduce Fe^{3+} to Fe^{2+}, confirmed the antioxidant activity of
ortho-dihydroxy-4-methylcoumarins.
The antiplatelet activity of pure compounds and herbal extracts was assayed *in vitro* on the
model of human platelets rich plasma (PRP; 250 ×10^9 platelets/L) at a concentration of 500
μg/mL PRP. Arachidonic acid (AA; final concentration in cuvette was 0,5 mM), adenosine
diphosphate (ADP; final conc. 10 μM) and collagen (COL; final conc. 2 μg/mL) were used as
agonists of platelet aggregation. Pure sap of *Croton lechleri*: at final conc. 0,5 mg/ml of
medium (PRP) decreased platelet aggregation by 100 ± 14 % (COL), 100 ± 11 % (ADP) and
100 ± 9 % (AA). Chloroform extract from Croton's sap: at final concentration 0,5 mg/ml of
medium (PRP) decreased platelet aggregation by 100 ± 12 % (COL), 81,33 ± 9 % (ADP) and

67 ± 8,5 % (AA).
From the group of tested coumarins the highest anti-aggregance acitivity exhibeted the group
of 5,7-dihydroxy-4-methylcoumarin and its C3 derivatives. *Ortho*-dihydroxy-4-
methylcoumarins exhibited anti-platelet activity approximatelly 10x lower compared to ASA,
when the aggregance was induced by ADP and 20x lower, when the aggregance was induced
by AA.