plex phytodrug the sedative effect is associated with the presence of biologically active substances. Particularly, the effect was due to the triterpenic saponines, glicoside hesperedin and polysaccharides of linden leaves. Flavonoids of St John's wort herb possess antidepressive activity. Thus, hypericin "softly" inhibits monoamineoxydase and hyperforin supresses the capture of the serotonin, noradrenalin and dopamin, and also inhibits GABA. So the phytodrug is consistent with the effect of comparator agent.

UNCOMMON APPROACHES FOR NATURAL PRODUCTS ANALYSIS — CAPILLARY ELECTROPHORESIS AND CAPILLARY ELECTROCHROMATOGRAPHY

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Analytical sciences are steadily evolving, with new techniques like capillary electrophoresis (CE) and capillary electrochromatography (CEC) being reported frequently. They often claim to be advantageous in respect to separation efficiency and selectivity, but sometimes fail to convince in terms of practical use. In this presentation the audience is briefly introduced to theory and characteristics of CE and CEC, followed by several respective applications on natural products analysis conducted in our lab. They range from the determination of flavonoids and phenolic acids in *Arnica montana* (CE-UV) (1), over quinolizidine alkaloids in *Lupinus* species (CE-MS) (2), to adrenergic amines in *Citrus aurantium* (3) and naphthoquinones in *Eleutherine americana* (monolithic CEC) (4). For the latter a comparison to HPLC was attempted. It showed that a novel methacrylate-based monolithic stationary phase enabled the baseline separation of five markers (including eleutherin and isoeleutherin) in less than 11 min (HPLC: 22 min), and permitted their quantitative analysis in herbal material with the same precision (e.g. total naphthoquinones by CEC: 0.41 %, by HPLC: 0.45 %). Only in respect to sensitivity CEC was less advantageous (limit of detection: 2–8 µg/ml, compared to 0.4–0.8 µg/ml by HPLC), otherwise all validation criteria were met and comparable. This and the above mentioned examples indicate the practical applicability of CE and CEC, and hopefully raise further interest in these "exotic" techniques.

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STRUCTURE AND BIOACTIVITY OF 1 MG VATIPAROL BY SLIM TUBE NMR

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Bioactive natural products offer multiple opportunities for the discovery of novel chemical entities with potential pharmaceutical and agrochemical applications. But, it is increasingly difficult to determine the structure and bioactivity of novel natural compounds available only in minor or trace quantities (1). Vatiparol, a resveratrol trimer from *Vatica parvifolia* with an unprecedented carbon skeleton, showed selective inhibitory effect on the expression of monocyte chemoattractant protein-1 (MCP-1) (2). Of particular importance for the structure determination of this organic compound that was available only in trace amounts is our determination of the relative configuration and accurate conformation of vatiparol with RDC (residual dipolar coupling) enhanced NMR using only one milligram of the sample in a 1.7 mm NMR tube. Based on the NMR determined conformation, the absolute configuration was elucidated with chiroptical methods (Figure).

In conclusion, the presented methodology and strategy will be generally useful for the determination of structure and bioactivity of novel natural compounds with limited availability.

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