Raunitidine isolated from Duroia macrophylla (Rubiaceae)

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are the antilus/antiphlogistic, and the spasmodlytic activity, which are attributed to triterpene saponins (glycyrrhinic acid and derivatives) and flavonoids (liquiritin, isoliquiritin and their aglycones), respectively [1]. According to the purpose used, it would be useful to have disposal different licorice genotypes with a respective composition of the active compounds. Although licorice is routinely cultivated, it is well known that propagation through conventional methods like e.g. cuttings is slow, when compared to in vitro-techniques. With the aim to develop an in vitro protocol for the rapid multiplication of selected genotypes, in our study we chose the method of somatic embryogenesis, because of its potential for scale-up [2]. Cotyledon explants of 7 days old seedlings proved to be best suitable to establish callus cultures. As for the formation of embryogenic callus, the growth regulator TD2 was superior to 2,4-D or picloram, and resulted in vigorous growth of embryogenic cal-
lus. For embryo maturation, subculture on nutrient medium without growth regulators gave best results of more than 80 embryos per gram of inoculated callus tissue. Within this study, the genotype did not sig-
nificantly influence the embryogenic potential. Through this protocol, the large scale clonal propagation of selected genotypes of Glycyrrhiza glabra is feasible, allowing for the production of plantlets of defined quality for further field culture. References: [1] Wichl, M. (2009) Tee-
drogen und Phytopharmaka. 5th edition. Wissenschaftliche Verlagsge-
gation by Tissue Culture. 3rd edition. Springer. Dordrecht, The Nether-
slands.

PJ29 Comparative effects of a valerian extract and single compounds on sleep and body temperature in mice evaluated by telemetry Chew N°, Fretz M°, Hamburger M°, Butterweck V°

Traditional use of Valeriana officinalis L. suggests sleep promoting prop-
erties, yet contemporary observations in clinical trials and rodent models using the extract and isolated compounds are contradictory [1,2]. We evalu-
ated locomotor activity and body temperature of mice using telemetry to obtain evidence of sleep promoting effects. This method pro-
vides a reduced variable environment which improves upon previous metho-
dologies. A 70% ethanolic extract of Valeriana officinalis root (250, 500, and 1000 mg/kg) was administered orally and data recorded for 180 minutes thereafter in male C57BL/6] mice. Oral administration of valerian extract had no effect on locomotor activity and body temperature compared to vehicle. Zolpidem (5 mg/kg, positive control) sig-
nificantly decreased locomotor activity by 57% (activity counts after 30 min; control: 492±1.418, zolpidem: 212.6±4.42; P < 0.001) and body temperature by 0.57°C (ATmax at 18 minutes, control: 36.53±0.12°C, zolpidem: 35.96±0.13°C; P < 0.001) whereas caffeine (5 mg/kg, negative control) increased an activity in 47% (activity counts after 30 minutes; control: 492±1.418, caffeine: 725.1±7.64; P < 0.01) without affecting body temperature. In conclusion, telemetry is a simple, adequate method for the specific measurement of sleep pro-
moting effects. The extract showed no significant difference to vehicle; yet, further studies on single compounds may help substantiate the use of Valeriana officinalis as insomnia treatment. References: [1] Hattel-

PJ30 Raunitidine isolated from Duroia macrophylla (Rubiaceae)

Nunez CV°, Santos PA°, Roumy V°, Hennebeile T°, Sahpaz S°, Mesquita ASS°, Baillieul P°

Duroia macrophylla Huber is a tropical tree, known as “puru”, which occurs in the Amazon region. Their fruits can be eaten and, as we know, no chemical study has been performed before. Leaves of D. macrophylla were dried at room temperature, ground and extracted with dichloro-
methane, methanol and later with water, by using ultra-sound for 20 minutes, each twice repeated and concentrated with reduced-pressure evaporator or lyophilizer. The methanolic extract was fractioned by using chromatographic techniques and HPLC for further purification. The chemical identification of the indolic alkaloid raunitidine was achieved by NMR and MS data analyses and literature comparison [1].


PJ31 Cannabinoid receptor Gα fusion proteins as a highly sensitive model system for characterization of receptor ligands Geiger S°, Seifert R°, Heilmann I°

So far two human cannabinoid receptors (hCBRs) have been identified [1], both belonging to the family of G-protein coupled receptors (GPCRs): the hCB1R [2] is mainly located in the brain and the hCB2R [3] is predominantly located in the periphery on immune cells. Because of their involvement in many physiological functions, such as move-
ment, metabolic regulation, host defense, analgesia and memory, there is a great interest in targeting these receptors for therapeutic applica-
tions. For the search for new CB ligands, we refined an existing in vitro assay [4] that allows for the differentiation of the pharmacological prop-
erties of a compound. In the already established steady-state [3H]-GTPase assay Spodoptera frugiperda (SF9) cells were used for the co-
expression of the CB, the Gα-subunit and the Gß-heterodimer. Because the expression levels and the density of these proteins in the cell mem-
brane influence the efficiency of the interaction between the receptor and the G proteins, we improved this assay using CBR-Gα fusion pro-
tiens. With these fusion proteins we can ensure a close proximity and defined stoichiometry of the signalling partners, resulting in higher coupling efficiency than the conventional co-expression system. This very sensitive test system enabled us to detect an agonist at the CBRs in a matrix of other compounds. Therefore we added Δ9-THC to a Δ9-THC-
free Cannabina sativa extract and found the expected increase of potency (e.g. extract logEC50 -6,08 vs. extract enriched with Δ9-THC logEC50 -6,86 at the CB,R) and extract logEC50 -5,86 vs. extract enriched with Δ9-