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ABSTRACT BOOK

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have been research. In the future, the effectiveness for cosupplementation of therapy with synthetic drugs and herbal drugs in neurodegenerative diseases should provide new "mixes" medications supplying better therapeutic effects and reduction of side effects.

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171. PRE-GELATINISED MACA (*LEPIDIUM PERUVIANUM CHACON*) AS NON-HORMONAL HERBAL REMEDY TO TREAT MENOPAUSAL SYMPTOMS IN PRE- AND POST-MENOPAUSAL WOMEN

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Maca root (*Lepidium peruvianum Chacon*) is traditionally-used by natives of Peru as an energizing vegetable for men and women and as herbal remedy for menopausal symptoms. Recently, it is increasingly used in the USA and Europe to treat conditions affecting postmenopausal women. Laboratory studies indicate that Maca may also be of value in treating depressive symptoms in perimenopause. In this three months, double blind study the effects of pre-gelatinized Maca-GO on 24 pre- and 25 post-menopausal women (aged 41–50 years and 48–62 years respectively) were examined. Level of sex hormones, Cortisol and Acetylcholine (ACTH) were measured as well as lipid profile and indices of menopausal discomfort were determined using menopausal index according to Greene and Kupperman. Post menopausal state was established on the basis of Estrogen (E2) and Follicle Stimulating Hormone (FSH) levels (below 40 pg/ml and above 30 IU/ml respectively). Two 500 mg capsules with Maca-GO powder were self-administered twice daily with meals (total 2 g/day) for the period of two months preceded by one month placebo period. Toxicity of Maca determined on rats showed its safe use at the level of 7.5 mg/kg body weight. Two months administration of Maca-GO significantly alleviated symptoms of discomfort observed in both groups of women as assessed by menopausal index. This was associated with significant increase in E2 and reduction in FSH, Triglycerides and Cholesterol blood levels. A significant increase in both Progesterone and ACTH levels was observed in pre-menopausal women with significant ACTH reduction in post-menopausal group. The results showed that pre-gelatinized Maca-GO may be a valuable non-hormonal plant preparation for balancing levels of hormones and alleviating negative physiological and psychological symptoms (depression and stress) experienced by women not only in post-menopause, but even more so in those, entering early and advanced perimenopausal stage.

172. THE EFFECT OF TAMANU OIL (*CALOPHYLLUM INOPHYLUM*) ON ANAEROBIC BACTERIA ISOLATED FROM RESPIRATORY TRACT

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Tamanu Oil (*Calophyllum inophyllum*) has been used traditionally in the South Pacific as a local medicine for variety of topical purposes with an acknowledged cicatrizing, antibacterial, antioxidant and anti-inflammatory properties. In addition to lipids, Tamanu Oil contains non-steroidal anti-inflammatory agents calophyllolides and xanthonones, antibacterial and antifungal phyto-chemical agents such as friedelin and a novel antibiotic lactone, all responsible for the oil's skin healing, cicatrizing and antibacterial properties. A cold-pressed oil from Tamanu originated in Vanuatu (Oceania) containing 3.91% Stigmasterol, 3.26% Beta-Sitosterol and 0.91% Campesterol, was used in this study. Antibacterial effect of the oil was

investigated on inhibition (MIC) of the total 37 strains (18 Gram-negative and 12 Gram-positive strains) of aerobic bacteria isolated from respiratory tract of 12 patients. Gram-positive anaerobic bacteria, strains *Propionibacterium* and *Actinomyces* (MIC 0.6–5 mg/ml) and *Peptostreptococcus* (MIC 1.2–5 mg/ml) have the highest sensitivity to oil and Gram-negative strains of anaerobic bacteria *Bacteroides pneumosintes* (MIC 2.5 mg/ml) the lowest. The remaining strains: *Bacteroides*, *Prevotella*, *Porphyromonas*, *Fusobacterium* and *Veilonella* required oil concentrations between MIC 5 – >20 mg/ml. Observed susceptibility of anaerobic bacteria to Tamanu oil may extend its current topical use to application in antimicrobial preparations for oral hygiene.

173. SHORT- AND LONG-TERM PHYSIOLOGICAL RESPONSES OF MALE AND FEMALE RATS TO TWO DIETARY LEVELS OF PRE-GELATINISED MACA (*LEPIDIUM PERUVIANUM CHACON*)

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Roots of Maca (*Lepidium peruvianum Chacon*) are used by natives of Peru as an energizing vegetable with invigorating, restorative and rejuvenating properties, reducing stress effect, increasing fertility and enhancing libido in both men and women. Current international interest in Maca is due to its energizing and revitalizing properties and its successful use in treating pre- and post-menopausal symptoms. In this study, the effect of pre-gelatinized (extruded) Maca-GO powder was investigated on Sprague-Dowley male (45) and female (45) rats receiving two dietary levels of powder (0.75 g/kg and 7.5 g/kg body weight) and assessed against control during 28 and 90 days trials. Blood morphology, levels of sex hormones, lipid profile, and histology of internal organs were determined and muscles and bones of rats were analyzed. As compared to the control group, after 28 days of trial, at both levels of Maca-GO intake, weight of males reduced significantly without effect on females, with significant increase in red cell volume, lymphocyte count in both sexes and significant decrease in triglycerides and Cortisol level. Low level of Maca-GO intake by female rats had no effect on Progesterone and Estrogen but high intake resulted in nearly four times increase in the Estrogen level as compared to control group. After 90 day intake, Maca-GO significantly increased blood glucose, bone calcium and phosphorus levels, decreased blood potassium and cortisol levels in both sexes and tissue lipids in males only with significant increase in Progesterone and tissue lipids in female rats. No differences were recorded between test and corresponding control rats in blood morphology and histopathology of internal organs. Obtained results showed that pre-gelatinized Maca-GO is safe for short-term and extended use as dietary supplement or in functional preparations. Different responses observed in male and female rats to both different levels of Maca-GO intake and the length of its administration warrant further more detail study.

174. HYPOGLYCAEMIC EFFECTS OF *MORUS NIGRA* L. LEAVES IN NORMAL AND DIABETIC RATS

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Mulberry (*Morus nigra* L.) is non-toxic natural therapeutic agent shown to possess hypotensive and diuretic properties. The alcoholic extract of *Morus nigra* L. leaves was tested for hypoglycaemic effect in normal and streptozotocin-diabetic rats. Graded amounts (0.25, 0.5 and 1 g/kg) of alcoholic extract of *Morus nigra* leaves, when given to both normal and streptozotocin-diabetic rats orally, caused a significant reduction of serum glucose concentration in streptozotocin-diabetic rats but not normal rats was noticed. Also, the alcoholic extract of mulberry did not change the level of insulin in