

RESEARCH UPDATES

Research highlights: (January – March 2016)

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A RETROSPECTIVE COHORT STUDY ON THE EFFICACY OF HOMOEOPATHY COMPARED TO HOMOEOPATHY PLUS CONVENTIONAL MEDICINE IN THE TREATMENT OF HYPERTENSION

Journal reference: Homeopathy, Volume 105, Issue 1, February 2016, Pages 11-12.

Author: Teh Chye Phing

Summary: Hypertension currently affects nearly one billion people worldwide. It is a major cause of global morbidity and mortality, as well as a major risk factor of various chronic and fatal diseases. Individuals suffering from hypertension have increased over the years, yet the rate of controlled blood pressure (<140/90 mmHg) remains poor. The aim of this retrospective cohort study is to evaluate the effects of homoeopathic treatment compared to integrated treatment using homoeopathy plus conventional pharmacotherapy in terms of blood pressure control, to determine its efficacy in the treatment of hypertension. Data were collected at the National Academy of Homoeopathy, India, located in Nagpur, Maharashtra. Cases diagnosed and treated for hypertension in 2013 under the outpatient department affiliated to Shaad Homoeopathic Hospital Complex and Research Centre were assessed for eligibility, classified, and analyzed. A total of 41 subjects were selected and classified into Homoeopathy group ($n = 22$) or integrated group ($n = 19$) according to the treatment they received. Statistical results with repeated measures ANOVA suggest that there is no significant difference between the Homoeopathy and the integrated group in terms of blood pressure reduction at the 6th week of the treatment. It is concluded that Homoeopathy on its own is as efficacious as Homoeopathy plus conventional pharmacotherapy in the treatment of hypertension.

Source: <http://www.sciencedirect.com/science/article/pii/S1475491615001137>

USE OF HOMOEOPATHY IN PATIENTS WITH ORGAN TRANSPLANT IN SWITZERLAND: FIRST RESULTS AND FURTHER STEPS

Journal reference: Homeopathy, Volume 105, Issue 1, February 2016, Pages 25.

Authors: Martin Frei-Erb, Klaus Von Ammon, Loredana Torchetti

Summary: To investigate retrospectively use of complementary and alternative medicine (CAM), in particular homoeopathy, in the treatment of patients with organ transplantation in Switzerland and to present a roadmap to follow-up. Of the 267 patients contacted, 124 (46%) completed the questionnaire, and data of 118 (44%) participants could be analyzed. Fifty-five were women (47%), mean age was 56 years, and 64 (54%) indicated CAM use. Different CAM methods were most common, with classical Homoeopathy being the most popular during the underlying disease leading to transplant (15% of all participants), but losing importance before, during, and after the transplantation itself. Among the 54 non-CAM users, the most frequent reasons for not choosing CAM were insecurity about interactions with conventional treatment (46%) and lack of information about this option (28%). The results point

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to the need of more information on possibilities and limits of CAM as add-on in the treatment of patients with transplantations for both, treating doctors and concerned patients.

Source: <http://www.sciencedirect.com/science/article/pii/S1475491615001411>

ULTRA-HIGH DILUTIONS OF HOMOEOPATHIC REMEDIES ALTER CELL VIABILITY AND INDUCE APOPTOSIS IN THE MCF-7 HUMAN-CANCER-CELL-LINE IN AN *IN VITRO* ENVIRONMENT

Journal reference: Homeopathy, Volume 105, Issue 1, February 2016, Pages 31.

Author: Gregor Kindelmann

Summary: Homoeopathy is a complementary and alternative medicine therapy widely used around the world to treat diseases, cancer being one of them. This trial addresses the question if cancer cells could directly be affected by homoeopathic preparations. an *in vitro* setup with automatized screening for cell viability and apoptosis for this purpose was used. Ultra-high dilutions (C30, C200) prepared according to the homoeopathic pharmacopeia and therefore called potencies of different remedies (*Phosphorus*, *Carcinosin*, *Phytolacca*, *Thuja*, *Asterias*, Carbo animals, *Agaricus phalloides*, *Sabal serrulata*) had been tested on cultures from breast cancer cell line MCF-7. HEK293 served as control for cell specificity. The potencies had been tested against demineralized water and dilutions of unpotentized *saccharose*. Remedies were applied in an 11-point two-fold series of dilutions in duplicate. This trial showed that *Phytolacca* and *Carcinosin* altered the viability of MCF-7 whereas the HEK-cells showed only little response. There was no clear correlation between the viability test and the apoptosis test after 24 h; thus, the main effects on viability occurred either due to cell cycle delay or arrest. *Phytolacca* and *Carcinosin* showed a distinct pattern of activation and inhibition over the series of dilutions that was very different from other remedies and controls. Strikingly, the same dilution could increase or decrease the viability. The findings suggest that ultra-high dilutions of substances have biological activity apart from placebo effects.

Source: <http://www.sciencedirect.com/science/article/pii/S147549161500154X>

EVALUATION OF CYTOTOXIC AND APOPTOTIC EFFECTS OF SEVERAL HOMOEOPATHIC DILUTIONS OF *ECHINACEA ANGUSTIFOLIA* ON HUMAN BREAST, CERVICAL, AND PROSTATE CANCER CELLS AND GENOTOXIC STUDY OF *ECHINACEA ANGUSTIFOLIA* MOTHER TINCTURE

Journal reference: Homeopathy, Volume 105, Issue 1, February 2016, Pages 8.

Authors: Lucero Delgado Pastelín, Cynthia Ordaz Pichardo, Gustavo Aguilar Velázquez

Summary: The aim of this research was to study the efficacy of homoeopathic dilutions of *Echinacea angustifolia* on different cancer cell lines. Cytotoxic activity of *Echinacea angustifolia* mother tincture (MT) and homoeopathic dilutions (6C, 30C, 200C, and 1M) was assessed on human cell lines: MDA-MB-231 (breast cancer), HeLa (cervical cancer), and PC-3 (prostate cancer). Cytotoxicity was measured using the 3-(4,5-dimethylthiazolyl-2)-2,5-diphenyltetrazolium bromide (MTT) method. Apoptosis was determined by Annexin-V with flow cytometry. To demonstrate the safety of homoeopathic dilutions, cytotoxicity was measured on peripheral blood mononucleated cells. Genotoxicity was evaluated by Ames test (*in vitro*) and micronucleus assay (*in vivo*).

Echinacea angustifolia homoeopathic dilution had a statistically significant decrease of cellular viability ($P < 0.05$ compared to the vehicle) on MDA-MB-231 cells. The higher cytotoxic effects were observed with the MT on MDA-MB-231 cells, also in a lesser degree in all homoeopathic dilutions. No cytotoxic effect was observed on PC-3 cells. The *E. angustifolia* MT induced death by early-apoptosis (48.6%) and late-apoptosis (34.4%) in MDA-MB-231 cells after 24 h of treatment. On the other hand, the *E. angustifolia* MT was not mutagenic and had no genotoxic effect *in vitro* or *in vivo*. This study provides scientific evidence of the ability of *E. angustifolia* homoeopathic dilutions to induce apoptosis in the breast cancer cell line MDA-MB-231, which encourages a possible use as supportive medicines in cancer therapy. Further *in vivo* studies of these homoeopathic remedies must be performed.

Source: <http://www.sciencedirect.com/science/article/pii/S147549161500106X>

RETROSPECTIVE OBSERVATIONAL STUDY OF PEOPLE WITH HUMAN IMMUNODEFICIENCY VIRUS AND ACQUIRED IMMUNE DEFICIENCY SYNDROME RECEIVING HOMOEOPATHIC TREATMENT IN SWAZILAND

Journal reference: Homeopathy, Volume 105, Issue 1, February 2016, Pages 26-27.

Authors: Barbara J. Braun, Kathryn P. Braun, Thandeka Mabuza

Summary: The purpose of this ongoing research is to investigate the effectiveness of homoeopathic treatment delivered to human immunodeficiency virus (HIV)-positive patients mainly in resource-limited settings. The study includes patients on antiretroviral therapy (ART) and those not yet initiated on ART in Swaziland. Data from the Swaziland Homoeopathy Project, 2014 clinic database were analyzed. The study is a retrospective, observational study of a group of 1003 HIV-positive individuals comprising 147 males and 856 females. Patients attend clinics voluntarily and are offered homoeopathic treatment as a complement to conventional medical treatment. Statistical analysis was carried out using the standard Student's *t*-test. The endpoints are changes in the Practitioner and patient overall scores (based on Karnofsky) and Symptom Evaluation Scale (visual analog scale [VAS]) scores. The analysis showed statistically significant positive changes in all average overall health scores of the patients between initial case-taking before remedy prescription and follow-up consultations. Mean patient scores for patients on ART increased by 1.18 points (from 6.11 to 7.29) on the 9-point Karnofsky scale ($P < 0.01$). Mean patient scores for those not on ART increased by 0.94 points, from 6.30 to 7.24 ($P < 0.01$). Practitioner scores showed similar increases. From all the overall health scores, an average of 66% of the patients showed improvement at the first monthly follow-up. Analysis of the symptoms indicated that symptom improvement occurred in 65% of all presenting symptoms at first follow-up. This trend was observed for both mental and physical symptoms. The study indicates that all patients, including those receiving ART and those not yet initiated, were significantly improved after receiving homoeopathic treatment. Symptom analysis indicates that homoeopathic treatment can alleviate both long- and short-term ART adverse effects including peripheral neuropathy and is effective in addressing emotional issues such as grief and trauma as well as opportunistic infections.

Source: <http://www.sciencedirect.com/science/article/pii/S1475491615001459>

SOLVATOCHROMIC DYES DETECT THE PRESENCE OF HOMOEOPATHIC POTENCIES

Journal reference: Homeopathy, Volume 105, Issue 1, February 2016, Pages 55-65.

Author: Steven J. Cartwright

Summary: A systematic approach to the design of simple, chemical systems for investigating the nature of homoeopathic medicines has led to the development of an experimental protocol in which solvatochromic dyes are used as molecular probes of serially diluted and agitated solutions. Electronic spectroscopy has been used to follow changes in the absorbance of this class of dyes across the visible spectrum in the presence of homoeopathic potencies. Evidence is presented using six different solvatochromic dyes in three different solvent systems. In all cases, homoeopathic potencies produce consistent and reproducible changes in the spectra of the dyes. The results suggest that potencies influence the supramolecular chemistry of solvatochromic dyes, enhancing either dye aggregation or disaggregation, depending on dye structure. Comparable dyes lacking the intramolecular charge transfer feature of solvatochromic dyes are unaffected by homoeopathic potencies, suggesting potencies require the oscillating dipole of solvatochromic dyes for effective interaction. The implications of the results presented both for an eventual understanding of the nature of homoeopathic medicines and their mode of action together with future directions for research in this area.

Source: <http://www.sciencedirect.com/science/article/pii/S1475491615000624>

A RANDOMIZED CONTROLLED TRIAL COMPARING PENTAZOCINE AND CHAMOMILLA RECUTITA FOR LABOR PAIN RELIEF

Journal reference: Homeopathy, Volume 105, Issue 1, February 2016, Pages 66-70.

Authors: Shamsa Zafar, Yawar Najam, Zaeema Arif, Assad Hafeez

Summary: A double-blind, randomized, controlled trial was carried out at Islamic International Medical College Trust. Ninety-nine normal pregnant women were randomly assigned to three groups. Each group

Research Highlights

received one of the three trial drugs namely *Chamomile*, *Pentazocine*, or placebo. The efficacy of labor analgesia was assessed by using visual analog scale (VAS) for pain intensity. Indicators of maternal and child health were recorded as were adverse effects of the drugs.

Results: Mean pain scores in the three groups were calculated and compared. The difference in mean VAS scores in *Pentazocine* and *Chamomilla recutita* group as compared with placebo were not statistically significant. No significant adverse effects were noticed in any group except slight headache and dizziness in three parturients in *Pentazocine* group.

Conclusion: Neither *Pentazocine* nor *C. recutita* offer substantial analgesia during labor.

Source: <http://www.sciencedirect.com/science/article/pii/S1475491615000715>

EVALUATION OF THE IMMEDIATE EFFECTS OF HOMOEOPATHIC REMEDIES USING THE HEART RATE VARIABILITY METHOD

Journal reference: Homeopathy, Volume 105, Issue 1, February 2016, Pages 35-36.

Authors: Palmena Angelova, Dora Pachova, Maria Djongova, Elena Dzambazova, Tim Vladimirov

Summary: We examined forty patients. Their age ranged from 7 to 65 years. After homoeopathic interview patients were lying fully relaxed. A basal examination was done – electrocardiography recording for 5 min and analysis of heart rate variability (HRV) parameters by special software. Then, patients received individually chosen remedy. The second measurement of HRV parameters was done 10 min after the remedy. Several parameters of HRV had been calculated: total power of HRV (TP), high frequency (HF), low frequency (LF), RR normal-to-normal (RRNN), pNN50, HF/LF, and standard deviation of normal-to-normal. The results were statistically assessed by SPSS and compared by Student's *t*-test. $P < 0.05$ was considered to indicate statistical significance. Patients filled questionnaires about level of anxiety, depressive tendencies, stress level, and strategies for stress management. The same tests were done after a month.

HRV was significantly increased after application of homoeopathic remedy in most of the cases. Decreased HRV in some cases is most probably due to the beginning of healing crises. There is significant increase of TP, RRNN, and HF after the remedy administration. HRV measurement registers the

immediate physiological effect of the homoeopathic remedies. This will be a good contribution to the homoeopathic practice as an indicator of the suitability of the remedy.

Source: <http://www.sciencedirect.com/science/article/pii/S1475491615001630>

EFFECTS OF HOMOEOPATHIC ARNICA MONTANA ON GENE EXPRESSION OF HUMAN MACROPHAGES: RESULTS OF QUANTITATIVE REAL-TIME POLYMERASE CHAIN REACTION

Journal reference: Homeopathy, Volume 105, Issue 1, February 2016, Pages 19.

Authors: D. Oliosio, M. Marzotto, C. Bonafini, P. Bellavite

Summary: The effect of *Arnica montana* on gene modulation of human monocytes (THP-1 cell line) was analyzed with RT-ARRAY polymerase chain reaction technique. THP-1 cells differentiated into activated macrophages by phorbol-12-myristate-13-acetate (PMA) for 48 h were challenged with different homoeopathic dilutions of *A. montana* (2c, 3c, 5c, 9c, and 15c diluted/dynamized in water, with 0.03% ethanol final concentration) and with control solution (water with 0.03% ethanol). Drug-treated and untreated macrophages were incubated for 24 h in the absence and the presence of 10 ng/ml *Escherichia coli* lipopolysaccharide (LPS). Total RNA was extracted and retrotranscribed into cDNA to quantify the relative amount of gene transcripts (SYBR Green dye) in treated cells respect to placebo (DDCt method).

Results and Discussion: The treatments with *A. montana* homoeopathic dilutions in cell cultures without LPS induced a significant changes in gene expression modulation for the CCL2 (freg = -40%), IL-1B (freg = -50%), and TNF- α (freg = -25%), compared with vehicle solution. The effect was not linearly related to dilution/dynamization, showing a pattern of down-regulation genes in all dilutions tested, except 15c. Different patterns were observed in the presence of LPS where only BMP2 gene resulted slightly up-regulated (freg = +20%). Our findings are compatible with a mild modulation of inflammatory process by homoeopathic dilutions/dynamizations of this plant, even if further studies are needed to clarify the molecular targets.

Source: <http://www.sciencedirect.com/science/article/pii/S1475491615001289>

EXPLORING THE MODEL OF MURINE INFECTION BY *TRYPANOSOMA CRUZI* TO INVESTIGATE TREATMENT WITH HIGHLY DILUTED DRUGS: THE INFLUENCE OF *LYCOPodium CLAVATUM* OR *PHOSPHORUS* IN WISTAR RATS

Journal reference: Homeopathy, Volume 105, Issue 1, February 2016, Pages 17-18.

Authors: Silvana Marques de Araújo, Camila Fernanda Brustolin, Paula Fernanda Massini, Neide Martins Moreira, Carlos Edmundo Rodrigues Fontes, Denise Lessa Aleixo

Summary: Research using highly diluted drugs has advanced significantly with increasing number of consolidated research groups. This work evaluates the influence of highly diluted *Lycopodium clavatum* or *Phosphorus* in Wistar rats infected by *Trypanosoma cruzi*. The experiment was conducted as a blind, controlled, and randomized by draw assay and was approved by the university ethical committee. Seven-five male rats (*Rattus norvegicus*, Wistar lineage), 45-day-old, intraperitoneally inoculated with 5×10^6 *T. cruzi* Y-strain blood trypomastigotes were divided into three groups: IC (infected control group, treated with 7% hydroalcoholic solution), Ly (infected treated with *L. clavatum* 13CH), and Phos (infected treated with *Phosphorus* 13 CH). All treatments were offered *ad libitum* on the 2nd day before the infection and the 2nd, 5th, and 7th day after infection, provided for 16 consecutive hours. Evaluated parameters were weight, temperature, water and food intake, amount of excreta, intestinal length and diameter, hair aspect, stool consistency, heart and respiratory rates, prepatent period, parasitemia peak, total parasitemia, evaluation of myenteric neurons, inflammatory infiltrate, and cytokines production. Data were statistically compared. *Lycopodium* and *Phosphorus* have significant beneficial effects on the clinical evolution of the treated animals. No significant difference was observed for any parasitological parameter evaluated. *Lycopodium* and *Phosphorus* groups showed protection of distal colon neurons numbers. The heart, liver and intestine of animals treated with *Lycopodium* and *Phosphorus* showed significantly less inflammation compared to IC. In striated skeletal muscle, *Phosphorus* animals showed the number of inflammatory foci higher than IC. In a sequential evaluation, IL1- α , IL1- β , IL4, IL6, IL10, IL12, TNF- α , IFN- γ , and GM-CSF levels varied significantly different for *L. clavatum* and *Phosphorus*.

The homeopathic treatment with *L. clavatum* or *Phosphorus* medicines (13CH) promoted, in a different way, beneficial effects on several parameters evaluated in *T. cruzi* infection of Wistar rats. *L. clavatum* and *Phosphorus* modify the animals' immune response, promoting less inflammation and protecting the intestine, and preserving the myenteric neuronal population.

Source: <http://www.sciencedirect.com/science/article/pii/S1475491615001265>

BONE COMPUTED TOMOGRAPHY MINERAL CONTENT EVALUATION IN CHICKENS: EFFECTS OF SUBSTANCES IN HOMOEOPATHIC CONCENTRATION

Journal reference: Homeopathy, Volume 105, Issue 1, February 2016, Pages 92-95.

Authors: Sergio Canello, Gabriele Gasparini, Patrizio Luisetto, Alessandro Di Cerbo, Fabio Pomerri,

Summary: Ninety-six Cobb race chickens were equally divided in four groups and randomly assigned to receive a standard treatment feed + homeopathic concentrations of *Symphytum (S.) officinalis* (9CH), or standard treatment feed + homeopathic concentrations of *Tricalcarea* (4CH), or standard treatment feed + homeopathic concentrations of *Calcarea (C.) carbonica* (30CH), or a placebo (the same feed but without any homeopathic compound) to assess the ability of the homeopathic compounds to increase the concentration of calcium hydroxyapatite in the sternal spongy bone tissue. We measured the concentration of calcium hydroxyapatite in the sternal spongy bone tissue of all chickens using a computed tomography.

Bone mineralization is usually low in battery chickens reared in commercial poultry-sheds, creating a weakness of the whole animal supporting apparatus. Homeopathic preparations with bone-tissue tropism may improve their health quality.

Source: <http://www.sciencedirect.com/science/article/pii/S1475491615000582>

PATIENT-ASSESSED CHRONIC ILLNESS CARE (PACIC) SCENARIO IN AN INDIAN HOMOEOPATHIC HOSPITAL

Journal Reference: Journal of Traditional and Complementary Medicine, Volume 6, Issue 1, January 2016, Pages 72-77.

Research Highlights

Author: Munmun Koley, Subhranil Saha, Shubhamoy Ghosh, Goutam Nag, Monojit Kundu, Ramkumar Mondal, Rajib Purkait, Supratim Patra, Seikh Swaif Ali

Summary: Homeopathy research has focused on chronic conditions; however, the extent to which current homeopathic care is compliant with the Chronic Care Model (CCM) has been sparsely shown. As the Bengali Patient-Assessed Chronic Illness Care (PACIC)-20 was not available, the English questionnaire was translated and evaluated in a government homeopathic hospital in West Bengal, India. The questionnaire showed acceptable test/retest reliability [intra-class correlation coefficient (ICC) 0.57-0.75; positive to strong positive correlations; $P < 0.0001$] for all domains and the total score, strong internal consistency (Cronbach's $\alpha = 0.86$ overall and 0.65-0.82 for individual subscales), and large responsiveness (1.11). The overall mean score percentage seemed to be moderate at $69.5 \pm 8.8\%$. Gender and presence of chronic conditions did not seem to vary significantly with PACIC-20 subscale scores ($P > 0.05$); however, monthly household income had a significant influence ($P < 0.05$) on the subscales except for "delivery system or practice design." Overall, chronic illness care appeared to be quite promising and CCM-compliant. The psychometric properties of the Bengali PACIC-20 were satisfactory, rendering it a valid and reliable instrument for assessing chronic illness care among the patients attending a homeopathic hospital.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26933640>

SAFETY AND EFFICACY OF LYCOPodium CLAVATUM 200DH IN TOXOPLASMA GONDII INFECTED MICE

Journal Reference: European Journal of Integrative Medicine, In press. Available online 8 March 2016.

Author: Andréia Vieira Pereira, Katiucha Rebeca Jennifer Lopes Lera, Milena Menegazzo Miranda, Ricardo Nascimento Drozino, Gislane Janaina Falkowski-Temporini, Marcelo Biondaro Góis, Ivete Conchon-Costa, Idessania Nazareth da Costa, Denise Lessa Aleixo, Silvana Marques de Araújo, Wander Rogério Pavanelli

Summary: Homeopathic treatment using *Lycopodium clavatum* is commonly prescribed for

acute conditions, and may have potential utility against *Toxoplasma gondii*. The safety and efficacy of *L. clavatum* 200dH were investigated using different treatment schemes in mice that were experimentally infected with *Toxoplasma gondii*. One hundred male Swiss mice, 60 days old, were divided into four groups ($n = 25/\text{group}$): NIC (uninfected and untreated control), IC (infected and treated with undynamized 7% alcohol solution [vehicle]), G48 (infected and treated 48 h before infection and treated three more times 2, 4 and 6 days post-infection [dpi] with *L. clavatum* 200dH), and G72 (infected and treated for 3 consecutive days before infection with *L. clavatum* 200dH). *L. clavatum* 200dH treatment in the G48 group was beneficial and provided a better clinical prognosis but resulted in a higher number of brain cysts at 60 dpi. Future research should carefully evaluate homeopathic medications, their potency, and specific treatment protocols.

Source: <http://www.sciencedirect.com/science/article/pii/S187638201630021X>

INTEGRATIVE MANAGEMENT OF PEDIATRIC TONSILLOPHARYNGITIS: AN INTERNATIONAL SURVEY

Journal Reference: European Journal of Integrative Medicine. 2016 Feb;22:29-32. doi: 10.1016/j.ctcp.2015.11.003. Epub 2015 Dec 2.

Author: Silvia Salatino, Alastair Gray

Summary: This survey investigated the management of pediatric tonsillopharyngitis, with a focus on natural remedies. 138 pediatricians, general practitioners and ear-nose-throat (ENT) specialists in 7 countries were surveyed by a dedicated questionnaire. Homeopathy remedies were prescribed as a supportive therapy by 62% of participants (85/138). In the chronic setting, homeopathy was suggested as a supportive therapy by 82/138 participants (59%), phytotherapy by 39 (28%) and vitamins/nutritional supplementation by 51 (37%). The management of tonsillopharyngitis in pediatric patients still remains empiric. Natural remedies, and homeopathy in particular, are used in the management of URTIs. An integrative approach to these infections may help reduce excessive antibiotic prescription.

Source: <http://www.ncbi.nlm.nih.gov/pubmed/26850802>

Research Highlights

COMPARISON OF HOMEOPATHIC GLOBULES PREPARED FROM HIGH AND ULTRA-HIGH DILUTIONS OF VARIOUS STARTING MATERIALS BY ULTRAVIOLET LIGHT SPECTROSCOPY

Journal Reference: Complementary Therapies in Medicine. Volume 24, February 2016, Pages 111–117.

Author: Sabine D. Klein, Ursula Wolf

Summary: Homeopathic globules are commonly used in clinical practice, while research focuses on liquid potencies. Sequential dilution and succussion in their production process has been proposed to change the physico-chemical properties of the solvent(s). The aim of the present study was to repeat and expand these experiments to homeopathic globules. Globules were specially produced for this study by Spagyros AG (Gümligen, Switzerland) from 6 starting materials (*Aconitum napellus*, *Atropa belladonna*, phosphorus, sulfur, *Apis mellifica*, quartz) and for 6 dilution levels (6x, 12x, 30c, 200c, 200CF (centesimal discontinuous

fluxion), 10,000CF). Native globules and globules impregnated with solvents were used as controls. Globules were dissolved in ultrapure water, and absorbance in the ultraviolet range was measured. The average absorbance from 200 to 340 nm was calculated and corrected for differences between measurement days and instrumental drift. Statistically significant differences were found for *A. napellus*, sulfur, and *A. mellifica* when normalized average absorbance of the various dilution levels from the same starting material. This study has expanded previous findings from aqueous potencies to globules and may indicate that characteristics of aqueous high dilutions may be preserved and detectable in dissolved globules.

Source: <http://www.sciencedirect.com/science/article/pii/S0965229915300388>

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