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Homeopathic medicines can alter genetic expression

By Sue Armstrong, MA, VetMB, VetMFHom, CertIAVH, MRCVS, RsHom | March 10, 2018

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STUDIES ARE SHOWING THAT HOMEOPATHIC MEDICINES HAVE AN EFFECT AT THE LEVEL OF GENETIC EXPRESSION, THEREBY GIVING THE HOMEOPATH ANOTHER TOOL FOR UNDERSTANDING THE POTENTIAL USES OF REMEDIES IN THEIR PATIENTS.

Over the course of more than 30 years as a practising veterinary surgeon, veterinary homeopath and human homeopath, I have witnessed the mainstream conventional scientific world slowly changing its perspective. Science is realizing that life is much more complex than the largely mechanistic models that assumed everything was merely a series of chemical reactions, where proteins act in a series of physical lock and key interactions, and DNA is believed to be housed in the nucleus of the cell with the genes simply coded for the chemicals of life.

We now know that if genes are present and have not been irrevocably damaged, they are capable of being switched on and off according to interactions with a multitude of factors, including diet and environmental changes. We also know that different arrays of over 25,000 genes code for the more than 100,000 proteins that make up the material of life. We're now beginning to understand how the interface works whereby electrical signals are transformed into chemical ones.¹

Researchers are currently able to measure changes occurring at the level of genetic switching. Homeopaths may now be able to measure and, in effect, "observe" the action of a dynamic medicine generating a change in the living body that then becomes material. Molecular

biological tools, such as DNA-microarrays and the ability to utilise specific cell line cultures, are making these studies possible, and the limited numbers of studies to date are providing some positive results.² A significant number of studies have shown a positive response, while some have not. It is important to critically evaluate the positive and negative results in studies within the context of the remedy and potencies used, the cell lines, etc.³

While beyond the scope of this article, there is another important aspect of many of these and related studies. A greater understanding of the hormesis concept (dose-response relationship that shows how substances can be either inhibitory or stimulatory at different dose rates) challenges the way conventional pharmacology has evaluated drug dose rates.⁴ Even before homeopathic medicine becomes mainstream, we will begin to see the use of therapeutic microdoses, and the use of the same substance given to inhibit or stimulate a body response according to dose, and perhaps according to the genetic makeup of the individual receiving the dose.

Significant studies

- One study⁵ looked at the gene expression of RWPE-1 cells (prostate epithelial cells) when exposed to *Apis mellifica* mother tincture — 3C, 5C and 7C potencies for 24 hours.² *Apis mellifica* is a very well-known remedy to homeopaths and is made from the honey bee, including the venom. This remedy is commonly used for many different presentations of allergy – edema, redness, pain and inflammation. The researchers looked at the expression of genes involved in cytokine expression, inflammatory processes, anti-oxidative responses and protease degradation. Not only did they find clear effects, but they also saw different effects from the mother tincture versus potentised dilutions. For instance, the mother tincture increased expression of the IL1b gene, which codes for a potent pro-inflammatory cytokine, whereas the potentised remedies reduced expression of the same gene.

- A number of studies have looked at *Gelsemium sempervirens* and gene expression.⁶ Bellavite et al exposed human SH-SY5Y cells (neuroblastoma cells) to potentised dilutions of *Gelsemium* (2C, 3C, 4C, 5C, 9C and 30C) for 24 hours and found that the expression of 56 genes was significantly changed (49 down-regulated and seven up-regulated). *Gelsemium sempervirens* has long been recognised by homeopaths as having its centre of action on the nervous system and muscles. The plant from which the remedy is derived contains strychnine-like alkaloids, such as gelsemine, that act within this sphere. The study authors suggest that the pain-relieving and anti-anxiety effects associated with the remedy may be attributed to the negative modulation of some neuronal excitatory signalling pathways.
- Using micro-array and RT-PCR techniques, Preethi et al investigated the expression of genes associated with cytotoxicity and apoptosis (programmed cell death) in Dalton's lymphoma tumor cells and other tumor cell lines.⁷ They exposed the cells to ten different potentised medicines, including *Ruta* 200C, *Carcinosinum* 200C, *Hydrastis* 200C, *Conium* 200C, *Podophyllum* 200C and *Thuja* 200C. They found different effects in different remedies and with different potencies. *Conium* 200C was more cytotoxic than its mother tincture; *Carcinosinum* was more cytotoxic at 200C than at 30C. The researchers were able to demonstrate clear gene induction in some cases — *Carcinosinum* 200C significantly induced p53 gene expression (pro-apoptotic gene).
- Khuda-Bukhsh et al used HeLA cells (HPV18 positive cells) to test the effects of the ultra-high dilutions *Condurango* 30C and *Hydrastis canadensis* 30C on gene expression when compared to controls.⁸ They were able to demonstrate significantly different gene expression patterns of genes associated with carcinogenesis for the ultra-high dilutions, when compared to controls. *Hydrastis canadensis* and *Condurango* are both commonly used as homeopathic medicines in cancer cases.

Classical homeopathic forefathers such as Clarke cited Hydrastis as the remedy that has cured more cases of cancer than any other single remedy.

Although homeopaths (in the UK at least) can make no claims of efficacy for homeopathic treatment, we are beginning to see the evidence in a form that is acceptable to the scientific world, thereby beginning to confirm what homeopaths have known for centuries. These studies not only show the effects homeopathic medicines have at the level of genetic expression, but they can also give the homeopath another tool for understanding the potential use of a remedy in a patient, in addition to traditional provings, cured case reports and toxicology studies.

The results to date align with what we already know regarding which systems and processes homeopathic remedies can affect. Now we may begin to understand a little more of how they are doing it. Through this understanding of switching genes on and off, conventional medical and homeopathic communities may have found a mutual ground for further consideration and comprehension.

Homeopathically-prepared DNA

DNA taken from a variety of sources (e.g. fish and cattle) has had a number of provings over the years (e.g. Julian, Jenaer and Robbins). Not surprisingly, homeopathically-prepared DNA has been found to have affinities with the mind, nerves, endocrine and reproductive systems.⁹ Recently, there has been a lot of interest in Sequence Specific Homeopathic DNA medicines, which use specific DNA sequences (300 to 400 base pairs in length) potentised to 6C and aimed at targeting genes known to have sub-optimal expression in certain disease states or processes. For instance, the KL gene is recorded to have reduced expression with age, and is associated with impaired immunity, signs of aging and increased susceptibility to autoimmune disease.¹⁰ While these medicines are not being used in the classical homeopathic tradition, it will be interesting to follow published results of their use.

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