

Homeopathic Drugs Modify Gene Expression in Cancer Cells

Researchers have discovered that very highly diluted homeopathic drugs can modify gene expression in cervical cancer cells¹.

*To probe the effects of homeopathic drugs on gene expressions, the researchers prepared two homeopathic drugs by highly diluting alcohol-based root extracts of two medicinal plants: *Hydrastis canadensis* and *Marsdenia condurango*. They then treated cultured cervical cancer cells with the drugs and a placebo drug for two days in a carbon dioxide incubator.*

The homeopathic drugs activated a host of genes, triggering apoptosis — a process that kills cancer cells in a controlled way. The drugs induced cell death by altering DNA methylation, an epigenetic process that is known to modify gene expression without changing DNA sequences.

*Of all the activated cancer-related genes, a marker gene known as *SMAD4* was found to be activated by the homeopathic drugs. This gene triggers a cascade of cellular events that eventually suppress tumour growth.*

“Since the homeopathic drugs are very highly diluted, they are non-toxic and could be used as nanomedicines for personalized treatment that depends on the individual genome,” says lead researcher Anisur Rahman Khuda-Bukhsh.

References

1. Saha, S. K. et al. Ultra-highly diluted plant extracts of *Hydrastis canadensis* and *Marsdenia condurango* induce epigenetic modifications and alter gene expression profiles in HeLa cells in vitro. *J. Integr. Med.* 13, 400–411 (2015)