AboutPharma - Homeopathy and scientific research, a possible combination?
Rachel Roberts, Chief Executive of the Homeopathy Research Institute (HRI), sought to answer this question in a digital media conference in which she outlined the active research areas, open challenges and limitations of the famous Australian report that has discredited homeopathy.

In 2015, a report published by the Australian National Health and Medical Research Council (NHMRC), which rapidly circulated around the world, concluded that "there are no clinical conditions for which there is reliable evidence that homeopathy is effective". It was considered to have put an end to the debate about whether homeopathy works, but NHMRC were forced to backtrack several years later, as it had not followed recognized scientific guidelines or standards in carrying out the review of evidence of efficacy.

The flaws of the Australian report
"The Australian report is so unscientific and inaccurate that it is useless as a summary of the evidence on homeopathy," said Rachel Roberts, Chief Executive of the Homeopathy Research Institute (HRI), at an online press event hosted by Boiron Italy: "Homeopathy and scientific research, a possible combination?" There are big differences between appearance and reality Roberts says, starting with the number of scientific papers on which the analysis was conducted: not more than 1800 as reported by the media at the time, but 176. Of these, according to Roberts, only five of the studies met their reliability criteria for a trial (minimum number of participants of 150 and a quality score of 5/5).

Thanks in part to HRI, the NHMRC recently released a first draft of a report on homeopathy carried out in 2012, which found "encouraging evidence in favour of the effectiveness of homeopathy" for five medical conditions. These included otitis media, upper respiratory tract infection in adults, and some side effects of cancer treatment. After receiving a draft version of this report in 2012, NHMRC hired a new contractor to review the evidence on homeopathy again. NHMRC is currently under investigation by the Commonwealth Ombudsman for its review of the evidence on homeopathy, following a complaint by the Complementary Medicines Australia (CMA) and Australian Homeopathic Association, with scientific input from HRI.

In 2019 Anne Kelso CEO of NHMRC, referring to the 2015 report, stated that “contrary to some claims, the review did not conclude that homeopathy was ineffective. Rather, she stated that 'based on the evaluation of the evidence for the efficacy of homeopathy, NHMRC concludes that there are no health conditions for which there is reliable evidence that homeopathy is effective'.

A different mechanism?
However, the focus on which the debate centres is always the same: how do homeopathic medicines work if they are so diluted that there is ‘nothing in them’? In fact, there are homeopathic medicines in which the original substance is diluted beyond Avogadro's number. "Ultrahigh dilutions" spark controversy because they cannot clearly act like conventional drugs, that is through the direct interaction of molecules with the body through chemical processes. Around the world, researchers are studying the mechanism of action of homeopathy, which would seem to be based more on physics than chemistry.

What is certain is that, although several theories are being explored, to date, it is not known how homeopathy works.

What is known is that several laboratory studies have shown that very highly diluted homeopathic medicines have biological effects that could not be found if they were "just water and sugar". However, no positive result has been stable enough to be reproduced by all researchers every time. An effect was observed in nearly 75% of the in vitro ultrahigh dilution experiments, and nearly 75% of replications were positive.

The challenge of scientific research in homeopathy

As scientists are gaining more and more experience in ultrahigh dilution experiments, it is gradually being understood what factors influence the results. Consequently, progress is being made with the reproducibility of these experiments. In particular, experiments carried out on basophilic leukocytes and on frogs have proved to be the most reproducible so far. Progress is also being made in identifying the most reproducible experiments in plants. However, until an experiment is carried out in which each group is able to obtain exactly the same effect every time, this area of research will remain controversial. This is the challenge of basic research in homeopathy.

The data available today

As Roberts states, those who attack homeopathy often argue that there are no scientific studies to support its plausibility and that, at most, any effectiveness can be attributed to the placebo effect. "Yet what most people don't know is that there is significant data and there is scientific evidence," she explains. “Research in homeopathy is a relatively new field. It is true that there are not many studies, but it is also true that the presence of *some* evidence is not the same as *no* evidence".

From studies conducted in the UK and France, for certain conditions such as insomnia, or in the agro-veterinary field for reducing the use of antibiotics, and the effects on plants, there are several important studies on homeopathy detailed by Ms Roberts. She showed that the research is in its infancy and more research is needed to consolidate and expand the current evidence base for clinical trials in homeopathy.

The future of scientific research in homeopathy

“Research in homeopathy is an area of great interest and growing, using rigorous scientific methods,” adds Roberts. “However, in the past decades, researchers have focused on multiple fields of interest, resulting in a dispersion of data. In fact, homeopathy is used in a wide variety of pathologies and this has led to the evidence collected over the years being distributed on numerous conditions, with few replicated studies on the same condition".

“This is why” – she concludes – “for the future it is desirable to implement a strategic program of research in homeopathy, focusing on a narrower range of conditions, with the aim of collecting a substantial body of data and promoting consistent research methods. It is appropriate that new research paths focus on the role that homeopathy can have in an integrated medicine approach, alongside conventional medicine”.