Dra. Concepción Calleja
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LAS ULTRADILUCIONES, BAJO EL FOCO DE LA ATENCIÓN CIENTÍFICA

¡Saludos, de nuevo!
La prensa últimamente no ha dejado de hablar de homeopatía. Por una parte, el Parlamento Británico quería dejar de subvencionar parte de la oferta de medicamentos homeopáticos de que han venido disponiendo los ciudadanos de ese país, retirando una pequeña partida de euros, eso sí, sin quitar nada a los cuatro hospitales homeopáticos que existen en Reino Unido (en Londres, Glasgow, Bristol y Liverpool), donde se desarrollan trabajos de investigación, además de curar con esta terapéutica. ¿Quién iba a ser el perjudicado por la iniciativa parlamentaria británica? Pues algunos ciudadanos de a pie. Afortunadamente, la idea, que había partido sólo de tres parlamentarios, fue finalmente desestimada por el grupo laborista.

Lo cierto es que la noticia se anunció en nuestro país como un bombazo, que luego se quedó en nada. En realidad, paralela a ésta surgió otra noticia a la que los medios no concedieron tanta importancia aunque realmente tiene un profundo calado: a las numerosas investigaciones que se desarrollan sobre homeopatía, ahora se añade la del Dr. Luc Montagnier –premio Nobel de Medicina en 2008 por su descubrimiento del virus del sida–, quien ha experimentado con ultradiluciones de fragmentos bacterianos de ADN, demostrando que tienen capacidad de inducir ondas electromagnéticas. La señal cambia con el nivel de dilución y permanece incluso después de que los fragmentos de ADN sean destruidos por agentes químicos. Las características y conclusiones de este estudio se han publicado en Interdisciplinary Sciencies: Computational Life Sciencies. 2009;1: 81-90, en un artículo titulado *Electromagnetic Signals Are Produced by Aqueous Nanostructures Derived from Bacterial DNA Sequences.*

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Electromagnetic Signals Are Produced by Aqueous Nanostructures Derived from Bacterial DNA Sequences

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Abstract: A novel property of DNA is described: the capacity of some bacterial DNA sequences to induce electromagnetic waves at high aqueous dilutions. It appears to be a resonance phenomenon triggered by the ambient electromagnetic background of very low frequency waves. The genomic DNA of most pathogenic bacteria contains sequences which are able to generate such signals. This opens the way to the development of highly sensitive detection system for chronic bacterial infections in human and animal diseases.
Key words: DNA, electromagnetic signals, bacteria.

Pathogenic microorganisms in this day of age are not only submitted to high selective pressure by the immune defenses of their hosts but also have to survive under highly active antiviral or antibiotic treatments. Not surprisingly, they have evolved in finding many ways to escape these hostile conditions, such as mutations of resistance, hypervariability of surface antigens, protective biofilms, latency inside cells and tissues.

We initially observed (Montagnier and Lavallee, personal communication) that some filtration procedures aimed at sterilizing biological fluids can yield under some defined conditions the infectious microorganism which was present before the filtration step. Thus, filtration of a culture supernatant of human lymphocytes infected with Mycoplasma pirum, a microorganism of about 300 nM in size, through filters of 100 nM or 20 nM porosities, yielded apparently sterile fluid. The latter however was able to regenerate the original mycoplasma when incubated with a mycoplasma negative culture of human lymphocytes within 2 to 3 weeks.

Similarly, a 20 nM filtration did not retain a minor infective fraction of HIV, the causal agent of AIDS, whose viral particles have a diameter averaging 100-120 nM.

In the course of investigating the nature of such filtering infectious forms, we found another property of the filtrates, which may or may not be related to the former: their capacity to produce some electromagnetic waves of low frequency in a reproducible manner after appropriate dilutions in water. The emission of such waves is likely to represent a resonance phenomenon depending on excitation by the ambient electromagnetic noise. It is associated with the presence in the aqueous dilutions of polymeric nanostructures of defined size. The supernatant of uninfected eukaryotic cells used as controls did not exhibit this property.

In this paper we provide a first characterization of the electromagnetic signals (EMS) and of their underlying nanostructures produced by some purified bacteria.

In addition to *M. pirum*, a more classical bacterium, *E. Coli*, was utilized for the purpose of the analysis. The nanostructures produced by HIV will be the subject of another paper.

M. pirum is a peer-shaped small bacterial cell, ressembling M. pneumoniae, which can be grown in synthetic enriched medium (SP4) (Tully *et al.*, 1977) but also mutiplies at the surface of human T lymphocytes.

The strain (Ber) used in our experiments was isolated from a T lymphocyte culture derived from the blood of an apparently healthy subject (Grau *et al.*, 1993). The strong mycoplasma adherence to lymphocytes is mediated by a specific adhesin, whose gene had been previously cloned and sequenced by the authors (Tham *et al.*, 1994).

We used as primary source of the mycoplasma, supernatants of infected human T lymphocyte cultures or of cultures of the CEM tumor T cell line. All cell cultures were first tested for the lack of *M. pirum* contamination by polymerase chain reaction (PCR) and nested PCR, before starting the experiments. Titers of 10^6-10^7 infec-

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En fin, que los médicos homeópatas no dejamos de extrañarnos –a la vez que concebimos esperanzas y nos desesperamos– ante el revuelo que suscita, cada dos por tres, la terapia con la que nosotros trabajamos, curando a la gente, cada día. En cualquier caso, siempre nos anima ver la salud recuperada en los pacientes a los que tratamos.

A nosotros sólo nos queda eso, y no es poco: la alegría de ver a nuestros pacientes sanos y la certeza de ayudar a que la población enferme menos (no olvidemos que la homeopatía es en gran parte preventiva). Porque, como al resto de los mortales, los conceptos, jergas y recursos tecnológicos de los investigadores no siempre nos resultan asequibles: lo nuestro, al fin y al cabo, es curar.
Pero sí debemos dar a esta noticia el lugar que merece, pues es un avance que puede abrir muchas puertas para la comprensión del efecto de las ultradiluciones.
¿Acabará con ella el acoso y derribo?