

¿Quién lo usó por vez primera?

Penicilina

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Es bien conocido que el bacteriólogo escocés Alexander Fleming protagonizó en el Hospital de Santa María de Londres uno de los mayores descubrimientos médicos de la historia cuando, en septiembre de 1928, observó casualmente que el hongo *Penicillium notatum*, cultivado en un medio adecuado, producía una sustancia de acción antibiótica.¹ Lo relata con detalle el propio Fleming en su artículo de 1929 en el *British Journal of Experimental Pathology*, donde comunica su hallazgo y acuña el término *penicillin*.²

While working with staphylococcus variants a number of culture-plates were set aside on the laboratory bench and examined from time to time. In the examinations these plates were necessarily exposed to the air and they became contaminated with various micro-organisms. It was noticed that around a large colony of a contaminating mould the staphylococcus colonies became transparent and were obviously undergoing lysis.

Subcultures of this mould were made and experiments conducted with a view to ascertaining something of the properties of the bacteriolytic substance which had evidently been formed in the mould culture and which had diffused into the surrounding medium. It was found that broth in which the mould had been grown at room temperature for one or two weeks had acquired marked inhibitory, bactericidal and bacteriolytic properties to many of the more common pathogenic bacteria.

[...] In the rest of this article allusion will constantly be made to experiments with filtrates of a broth culture of this mould, so for convenience and to avoid repetition of the rather cumbersome phrase “Mould broth filtrate”, the name “penicillin” will be used. This will denote the filtrate of a broth culture of the particular penicillium which we are concerned [A. Fleming (1929): «On the antibacterial action of cultures of *Penicillium*, with special reference to their use in the isolation of *B. influenzae*», *Br J Exp Pathol*, 10: 226-236].

El descubrimiento de Fleming quedó inicialmente relegado al ámbito de los avances meramente teóricos, hasta que, a partir de 1933, la revolución de las sulfamidas estimuló de forma espectacular la investigación en el ámbito de la terapéutica antimicrobiana. Primero solo quimioterápicos, pero luego también antibióticos, cuando, en 1939, un equipo de investigadores bioquímicos de la Universidad de Oxford, encabezado por el alemán Ernst Chain, el australiano Howard W. Florey y los ingleses Arthur D. Gardner y Norman G. Heatley, expuso en las páginas de *The Lancet* las enormes posibilidades terapéuticas de la penicilina de Fleming, también en la práctica clínica.

In recent years interest in chemotherapeutic effects has been almost exclusively focused on the sulphonamides and their derivatives. There are, however, other possibilities, notably those connected with naturally occurring substances. It has been known for a long time that a number of bacteria and moulds inhibit the growth of pathogenic micro-organisms. Little, however, has been done to purify or to determine the properties of any of these substances.

[...] Fleming noted that a mould produced a substance which inhibited the growth, in particular, of staphylococci, streptococci, gonococci, meningococci and *Corynebacterium diphtheriae*, but not of *Bacillus coli*, *Haemophilus influenzae*, *Salmonella typhi*, *P. pyocyanea*, *Bacillus proteus* or *Vibrio cholerae*. He suggested its use as an inhibitor in the isolation of certain types of bacteria, especially *H. influenzae*. He also noted that the injection into animals of broth containing the substance, which he called “penicillin”, was no more toxic than plain broth, and he suggested that the substance might be a useful antiseptic for application to infected wounds.

[...] During the last year methods have been devised here for obtaining a considerable yield of penicillin, and for rapid assay of its inhibitory power. From the culture medium a brown powder has been obtained which is freely soluble in water. It and its solution are stable for a considerable time and though it is not a pure substance, its antibacterial activity is very great [E. Chain, H. W. Florey, A. D. Gardner, N. G. Heatley, M. A. Jennings, J. Orr-Ewing y A. G. Sanders (1949): «Penicillin as a chemotherapeutic agent», *Lancet*, 2: 226-8.

En 1945, el Premio Nobel de Medicina y Fisiología se otorgó conjuntamente a Fleming, Chain y Florey, en reconocimiento a un avance médico cuya trascendencia solo difícilmente podemos valorar quienes no llegamos a conocer los estragos que causaban los cuadros infecciosos en la era preantibiótica.

¹ Menos conocido es —incluso entre hispanohablantes— que un año antes el investigador costarricense Clorito Picado Twight había comunicado públicamente, en un informe científico enviado a la Sociedad de Biología de París, la acción antibiótica de los hongos del género *Penicillium*.

² Sobre el origen de este vocablo y su parentesco etimológico con el pene, véase: Fernando A. Navarro (2002): «Pene y penicilina», En: *Parentescos insólitos del lenguaje*. Madrid: Del Prado, pp. 161-162.