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Kuć J. Phytoalexins. *Annu. Rev. Phytopathol.* **10**:207-32, 1972.
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Phytoalexins are low molecular weight antimicrobial compounds produced by plants after infection or metabolic stress. They are part of a plant's multicomponent response mechanism for disease resistance, and the speed and magnitude of their accumulation is important in determining disease resistance to fungal and bacterial diseases. [The *SCI*® indicates that this paper has been cited in over 160 publications since 1972.]

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"My interest in plant disease resistance started 44 years ago on the fire escape of an apartment house located on Jackson Avenue in the Bronx. Much to the chagrin of the fire inspector, the fire escape had pole bean vines growing up the ladders, tomato vines tied to the railings, peppers, and an occasional zinnia growing in pots where space was available. My interest in chemistry and biology as related to plant disease resistance was nurtured at the Bronx High School of Science and clearly focused by working at the New York Botanical Gardens during the summers while studying for a BS in biochemistry at Purdue University. During those summers, I was privileged to have as my mentor the world famous plant pathologist, P.P. Pirone. He advised and encouraged me to apply my knowledge of chemistry to obtain an understanding of disease resistance mechanisms in plants and to the regulation of such mechanisms for the control of disease. Graduate research for a PhD in biochemistry at Purdue and subsequent research as a faculty member at Purdue and the University of Kentucky have had these objectives.

"The paper is probably frequently cited because it brings together research on phytoalexins and response mechanisms for disease resistance in plants at a critical stage in the field. The early reports from the laboratory of I.A.M. Cruickshank [1,2] and my own research were looked at with interest but also with skepticism. People doubted plants had an 'immune system.' Today, phytoalexins are an acknowledged component of the disease resistance mechanisms in plants.

"At Kentucky, my research group continued its studies of phytoalexin structure and biosynthesis and the regulation of phytoalexin accumulation.[3] It became apparent that all plants had the genetic information for disease resistance mechanisms, and the difference between resistance and susceptibility was the speed and magnitude with which this information was expressed.[4,5] This led us to research in plant immunization, and we reported that plants could be systemically immunized against diseases caused by fungi, bacteria, and viruses by restricted infection with pathogens, avirulent or attenuated forms of pathogens, or compounds extracted from pathogens or immunized plants.[4-6] As with animals, elicitors, enhancers, and suppressors, produced by the pathogen or plant, appear to have a role in regulating disease.[7] It is clear that resistance mechanisms can be systemically activated in plants by methods resembling immunization in animals. Though the mechanisms activated in plants and animals are not the same, both are equally effective for survival of the species.

"My research has been recognized by awards that include: the Campbell Award from the American Phytopathological Society, an award from the University of Kentucky Research Foundation, a senior scientist award from the Alexander von Humboldt Society, the Thomas Poe Cooper Award from the University of Kentucky, appointment as Distinguished Alumni Professor, University of Kentucky, and designation as a Fellow of the American Phytopathological Society."

1. **Cruickshank I A M.** Phytoalexins. *Annu. Rev. Phytopathol.* 1:351-74, 1963.
2. ----------. Citation Classic. Commentary on *Annu. Rev. Phytopathol.* 1:351-74. 1963. *Current Contents/Agriculture, Biology & Environmental Sciences* 12(19):20. 11 May 1981.
3. **Kuć J.** Phytoalexins and the specificity of plant-pathogen interaction. (Wood R K S & Graniti A, eds.) *Specificity in plant disease*. New York: Plenum Press, 1976. p. 253-71.
4. **Kuć J & Caruso F.** Activated coordinated defense against disease in plants. (Hedin P, ed.) *Host plant resistance to pests*. Washington, DC: American Chemical Society Press, 1977. p. 78-89.
5. **Kuć J.** Induced immunity to plant disease. *Bioscience* 32:854-60, 1982.
6. --------. Induced systemic resistance in plants to diseases caused by fungi and bacteria. (Bailey J & Deverall B, eds.) *The dynamics of host defense*. New York: Academic Press, 1983. p. 191-221.
7. --------. Phytoalexins from the Solanaceae. (Bailey J & Mansfield J, eds.) *Phytoalexins*. Glasgow: Blackie & Sons, 1982. p. 81-105.