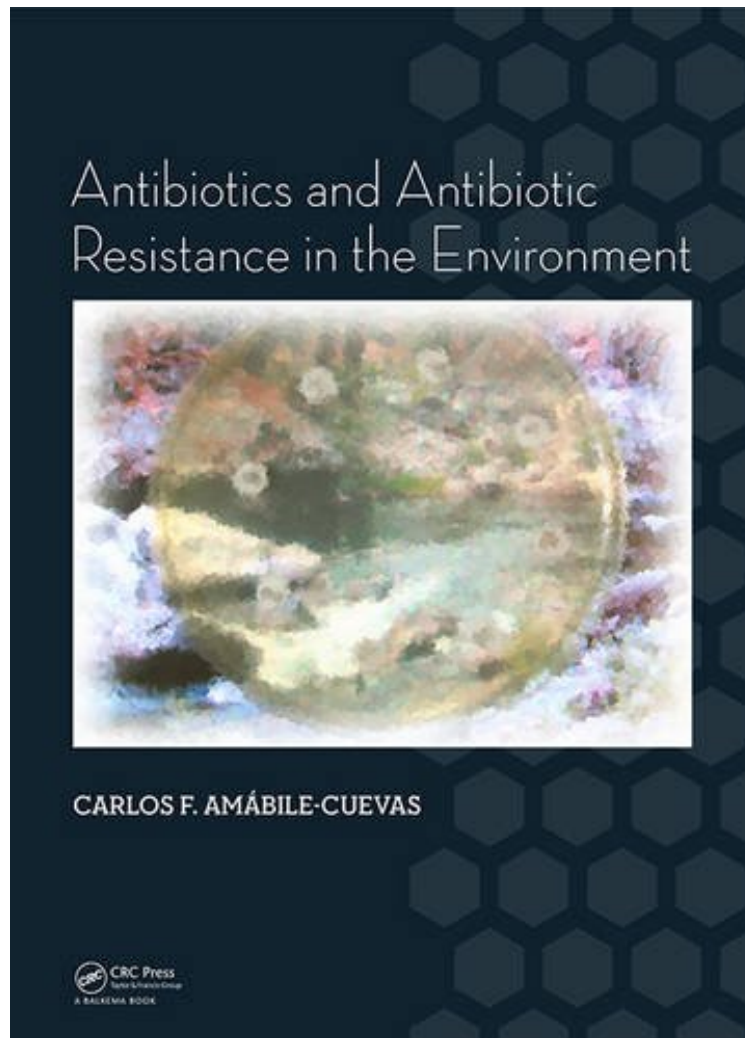


# Antibiotics and Antibiotic Resistance in the Environment

*Carlos F. Ambile-Cuevas*

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**Carlos F. Ambile-Cuevas : Antibiotics and Antibiotic Resistance in the Environment** before purchasing it in order to gage whether or not it would be worth my time, and all praised Antibiotics and Antibiotic Resistance in the Environment:

The presence of antibiotics, antibiotic resistance genes, and antibiotic resistant bacteria in the environment (i.e., outside of clinical settings, such as antibiotic-treated patients or antibiotic-impregnated locations, such as hospitals) is a cause of growing worldwide concern, as it reveals the extensive impact of antibiotic abuse and other human-related pressures upon microbes. Also, the potential clinical and environmental impact of the presence of antibiotic resistance

outside the obvious clinical settings is mostly unknown, but could be unexpectedly large, as resistance in clinical conditions can be seen as a very small "tip of the iceberg". The field of detecting and measuring resistance in the environment has rapidly evolved from mostly anecdotal reports at the end of the 1990s, to a systematic search of organisms and genes in a wide variety of settings, from ancient permafrost to migratory birds. This book will review the available evidence and hypotheses on where this resistance is coming from and for how long it has been there; what are the selective and maintenance pressures involved, and how is resistance spreading; what are the known and possible traits that are being selected and spread along with antibiotic resistance ones; what are the laboratory and in-silico strategies to look into this issue, and their advantages and disadvantages.

For readers with a basic background in biology, this book provides a very useful discussion of most aspects of this topic, including definitions of antibiotics and resistance, the mechanisms responsible for resistance, and the practices that contribute to this problem. H. E. Pence, SUNY College at Oneonta, written in *Choice Magazine* (September 2016 issue) About the Author C.F. Ambile-Cuevas (DSc, Pharmacology), has been an active researcher in different aspects of antibiotic resistance for the last 25 years. Aside from experimental work on resistance prevalence, underlying mechanisms, selection and spread in the environment; he has authored several reviews and divulgation papers, and has authored/edited five books on antibiotic resistance. CFA-C was a visiting scholar at the Department of Biochemistry and Molecular Biology, Harvard University; was Associate Professor of Pharmacology at the National University of Mexico; and is founder and director of Fundacion Lusara, a private research institution based at Mexico City, devoted to research and teaching on antibiotic resistance.