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The potential implications of reclaimed wastewater reuse for irrigation on the agricultural environment: the knowns and unknowns of the fate of antibiotics and antibiotic resistant bacteria and resistance genes – A review



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The potential implications of reclaimed wastewater reuse for irrigation on the agricultural 2 environment: the knowns and unknowns of the fate of antibiotics and antibiotic resistant bacteria and resistance genes – A review 3 4 5 Anastasis Christou^{1*}, Ana Agüera², Josep Maria Bayona³, Eddie Cytryn⁴, Vasileios Fotopoulos⁵, 6 Dimitra Lambropoulou⁶, Célia M. Manaia⁷, Costas Michael⁸, Mike Revitt⁹, Peter Schröder ¹⁰, 7 Despo Fatta-Kassinos^{8,11**} 8 9 10 ¹Agricultural Research Institute, Ministry of Agriculture, Rural Development and Environment, 11 P.O. Box 22016, 1516 Nicosia, Cyprus ²Solar Energy Research Centre (CIESOL), Joint Centre University of Almería-CIEMAT, 04120, 13 14 Almería, Spain 15 ³IDAEA-CSIC, Environmental Chemistry Department, E-08034, Barcelona, Spain ⁴Institute of Soil, Water and Environmental Sciences, Volcani Center, Agricultural Research 16 Organization, P.O Box 15159, Rishon Lezion, Israel 17 18 ⁵Department of Agricultural Sciences, Biotechnology and Food Science, Cyprus University of Technology, 3603 Lemesos, Cyprus 19 ⁶Aristotle University of Thessaloniki, Department of Chemistry, 54124, Thessaloniki, Greece 20 ⁷Universidade Católica Portuguesa, CBQF - Centro de Biotecnologia e Química Fina -21 Laboratório Associado, Escola Superior de Biotecnologia, Rua Arquiteto Lobão Vital, Apartado 22

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