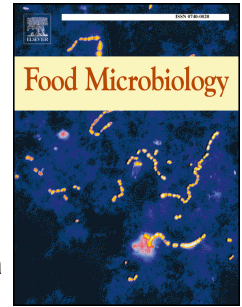


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Isolation and characterization of multidrug-resistant bacteria from minced meat in Austria

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1 Isolation and characterization of multidrug-resistant bacteria from minced 2 meat in Austria

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7 **1 Introduction**

8 Contamination of raw meat with pathogens, such as *Salmonella* spp., *Campylobacter* spp.,
9 *Listeria monocytogenes*, *Staphylococcus aureus* or *Escherichia coli*, can result in adverse
10 effects on human health, these being potential sources for food borne infections or food
11 poisoning. The contamination of food with zoonotic bacteria is just one of many issues in this
12 respect, yet well monitored by national surveillance laboratories. However, resistant bacteria
13 with medical relevance are not monitored. These certainly could carry a risk for consumers,
14 as well as for food handlers working in abattoirs to get colonized or infected (Marshall &
15 Levy, 2011; Seiffert, Hilty, Perreten, & Endimiani, 2013).

16 Although the use of antibiotics as growth promoters was banned in food animal production in
17 the EU in 2006 (European Parliament & European Council, 2003), resistant bacteria are still
18 detected in meat of livestock animals; however numbers are decreasing (Marshall & Levy,
19 2011). Nonetheless today antibiotics are still used in veterinary medicine for treatment of sick
20 animals or prophylactic purposes. These antibiotics are occasionally identical to those used
21 in human medicine and are often of high clinical importance. Therefore resistant bacteria in
22 animals can be regarded as an underrated threat for human medicine. Recent studies show
23 that resistant bacteria are not only present in livestock animals, but also in the environment

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