Antibiotic Susceptibility of *Pseudomonas* from Sea Bass (*Dicentrarchus labrax*) in Aegan Sea, Türkiye

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Abstract: Antibiotic resistant bacteria are a global health threat. The increase in the rate of spread of antibiotic resistance in recent years is concerning. Türkiye and Greece are the leading countries in the production of sea bass (*Dicentrarchus labrax*) in the World. In this study, the bacterial skin microbiota of sea bass (n=96) obtained from 8 fish farms from 12 regions of Türkiye's Aegean Sea borders was examined by next-generation sequencing method and metabarcoding. *Pseudomonas* spp. was found to be the dominant species (96/96, 100%) and *Shewanella* spp., *Acinetobacter* spp., and *Flavobacterium* spp. were the common species. When *Pseudomonas* spp. was found in all samples, this species was investigated by classical microbiological method, and *Pseudomonas* spp. (46/96, 48%) were obtained. Resistance to penicillin, aminoglycosides, carbapenems, fluoroquinolones, and tetracyclines was measured by disc diffusion method according to the European Committee on Antimicrobial Susceptibility Testing (EUCAST) and Clinical and Laboratory Standards Institute (CLSI). According to EUCAST and CLSI, 13 of the strains (28.3%) were resistant to doripenem by the disc diffusion method. The minimum inhibition concentration of resistant strains was measured by E-test. According to EUCAST and CLSI standards, 3 and 2 strains were resistant to doripenem and

imipenem, respectively, and the carbapenem resistance observed is concerning. All strains were susceptible to piperacillin-tazobactam, gentamicin, amikacin, levofloxacin, norfloxacin and tetracycline. Next-generation molecular genetic studies and antibiotic resistance in samples obtained from the Aegean Sea provide important information about the epidemiology of carbapenem resistance. This study is the first bacterial skin microbiota analysis study on sea bass (*Dicentrarchus labrax*) using Next-Generation Sequence method in Türkiye.

Keywords: Sea bass; Next-Generation Sequence; *Pseudomonas* spp; Carbapenem resistance; Public Health