LETTER TO THE EDITOR/
RESEARCH LETTER

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Agrobacterium tumefaciens isolated from hemodialysis water

Agrobacterium tumefaciens izolovan iz rastvora za hemodijalizu

To the Editor

Agrobacterium tumefaciens is Gram-negative, oxidase-positive rod shaped soil bacterium, belonging to the family Rhizobiaceae which includes the nitrogen-fixing legume symbionts. *Agrobacterium tumefaciens* causes a crown gall disease in a wide range of dicotyledonous (broad-leaved) plants, especially members of the rose family and grapevine. This bacterium is known for its remarkable biology, as it is capable to transfer a part of its DNA, known as a tumor inducing plasmid of 200 base pair to the plant, integrating into a plant's genome, and, consequently, causing tumorous changes in plants [1]. Due to its ability to cause such changes in plants it should be considered as a potential pathogen for humans also, especially in an immunosuppressed host [2, 3]. Based on several literature reviews, *Agrobacterium tumefaciens* is isolated occasionally from various human clinical specimens: blood, peritoneal fluid, ascites, catheter or implanted medical devices [4–7].

Recently, during the regular microbiological examination of hemodialysis water used in the Dialysis Center of the Clinical Centre of Vojvodina in Novi Sad, *Agrobacterium tumefaciens* has been isolated.

The microbiological examination was performed according to the ISO 13959:2014, ISO 11663:2014, ISO 23500:2014 standards. Brefly, a sample of hemodialysis water (100 mL) was aseptically filtrated through the membrane filter system (Sartorius, Germany) using the sterile mixed cellulose esters membrane filters 0.45 μm pore size (Millipore, Merck, Germany), after which the membrane filter paper was placed on R2A agar (Oxoid, UK), incubated on 22°C for 7 days. After visible rise of colonies, they were subculturing on blood agar (Oxoid, UK) and further examination and confirmation was done using MALDI-TOF-MS (Matrix-assisted Description/Ionization Time-of-Flight Mass Spectrometry, Brucker, USA). The antimicrobial sensitivity testing of isolated *Agrobacterium tumefaciens* showed its multiple resistance to ampicilin, amoxycilin, gentamicin, trimethoprim-sulfamethoxazole and vankomicin.

The finding of multiresistant *Agrobacterium tumefaciens* in a sample of water for hemodialysis arouses a big doubt about the hygiene of the device for hemodialysis with a potential development of a severe infection in the patients subjected to this treatment. Namely, several scientific papers suggested that *Agrobacterium tumefaciens* was the cause of infections in the patients on hemodialysis [8–10].

To our knowledge, this is the first case of isolation of *Agrobacterium tumefaciens* in a clinical setting in Serbia.

Gordana Smieško, Vera Gusman
University of Novi Sad, Faculty of Medicine, Department of Microbiology, Novi Sad, Serbia;
Institute of Public Health of Vojvodina, Novi Sad, Serbia

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Correspondence to: Gordana Smieško, University of Novi Sad, Faculty of Medicine, Department of Microbiology, Dr Zorana Đinđića 1, 21 000 Novi Sad, Serbia. E-mail: gordana.bojic@mf.uns.ac.rs

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