

Nocardia donostiensis

Edmond Nocard was a French veterinarian and microbiologist born in Provins in 1850. One of his main contributions to medicine was the discovery of a bacterial genus called “*Nocardia*” on his honor. Most of the species belonging to the genus *Nocardia* are frequently found in soil and aquatic environmental. The variety and quantity of *Nocardia* species found in a given soil is related to its geographic location and characteristic composition. In the last few years, human infections caused by *Nocardia* species which had never been before referred as causing disease have been described. However, of the more than 100 *Nocardia* species known to date, only about 30 have been described as causing infections in humans. “*Nocardia donostiensis*” described for the first time in 2016, has been the last one to join this list.



Fig. 1. Donostia – San Sebastian city the village where *Nocardia donostiensis* was discovered.

Nocardia donostiensis is a new *Nocardia* species, so called after the name of the city of “Donostia – San Sebastián”, Basque Country, Spain, the place where it was first isolated and hence its name. Most human *Nocardia* infections are considered to be initiated by breathing air containing this microorganism (respiratory transmission). Other ways of infection includes the contact with these bacteria through an open wound (contact transmission). Up to date, there have only been described two cases of *Nocardia donostiensis* infection: one in Donostia and the other in North Carolina, USA. Both cases showed respiratory symptoms, suggesting the respiratory tract as the route of infection.

As other *Nocardia* species, *Nocardia donostiensis* potentially could infect all kind of patients, but it will cause disease especially in patients with a history of chronic obstructive pulmonary disease, long corticosteroid use, cancer, AIDS and other immunosuppressing conditions.

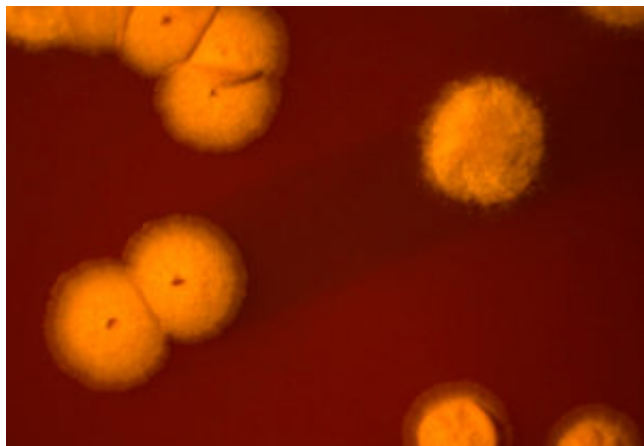


Fig. 2. *Nocardia donostiensis*.

To date, *Nocardia donostiensis* has been described causing only respiratory infection, with symptoms similar to pneumonia (rapid breathing, chest pain not linked to cardiac problems and cough with mucus and/or coughing up blood). It could cause more severe diseases affecting other organs as other *Nocardia* species by this kind of infections have not been described yet.

The identification of *Nocardia donostiensis* was performed by means of molecular biology techniques mainly based on DNA sequencing and whole genome hybridization. With the biochemical tests used until recently its characterization would have been nearly impossible.

Nocardia donostiensis infections can be treated with antibiotics being trimethoprim – sulfamethoxazole or linezolid the most appropriated according to the antibiotic “in vitro” susceptibility and experience with other *Nocardia* species infections..

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