



Capnocytophaga canimorsus

Capnocytophaga canimorsus, formerly known as “Dysgonic fermenter-2”, is a member of the *Capnocytophaga* genus. Species of the *Capnocytophaga* genus are fastidious, facultative anaerobic gram-negative bacilli that are associated with gingival flora. It is typically accepted that there are nine species belonging to the *Capnocytophaga* genus, six of which are associated with human gingival flora: *C. gingivalis*, *C. leadbetteri*, *C. haemolytica*, *C. orchracea*, *C. granulosa* and *C. sputigena*. The other three are associated with the gingival flora of cats and dogs: *C. canimorsus*, *C. canis* and *C. cynodegmi* (Suzuki et al., 2018; Zangenah et al., 2016).

Capnocytophaga canimorsus, a commensal of the gingival flora of cats and dogs, can cause deadly infection when transmitted to humans. The primary extrinsic risk factor for *Capnocytophaga canimorsus* infection is a dog bite, reported in 60% of cases. Symptoms develop 3-5 days after exposure. Signs and symptoms range from blisters, redness, swelling, pus or pain at the wound, to fever, diarrhoea and/or stomach pain, vomiting and headaches and /or confusion. Intrinsic risk factors for infection, particularly invasive infection, include: splenectomy, excessive alcohol use, cancer or cancer treatment, chronic lung disease and diabetes (CDC, 2024). In recent years, however, there has been increasing evidence that the infection is not limited to the immunocompromised (Mader et al., 2020)

The most common presentation of *Capnocytophaga canimorsus* infection is sepsis, followed by meningitis (Butler et al., 2015). The standard approach for the diagnosis of sepsis is the blood culture pathway, which is poorly adapted for the identification of fastidious organisms such as *Capnocytophaga canimorsus*, resulting in prolonged time to diagnosis, incorrect species identification or no successful identification. A study by Janda et al. in 2006 reported that only 32% of *Capnocytophaga canimorsus* isolates forwarded to the Microbial Diseases laboratory in California had correct species identification, with 55% of specimens received defined as either an unidentified gram-negative rod or without successful identification. NAAT testing provides a rapid, sensitive and definite method for identifying *Capnocytophaga canimorsus* and can be performed on blood and CSF directly as well as on blood cultures and isolates.

Our assay:

At Micropathology Ltd, a real time probe-based assay is employed for the qualitative detection of *Capnocytophaga canimorsus* DNA. The limit of detection of this assay is 88 copies/mL. Amplification has been demonstrated in EDTA whole blood and blood cultures.

References:

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