

Isolation and characterization of a new *Helicobacter* sp. belonging to the “*Helicobacter heilmannii*” type 2 group from feline stomachs

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Three Gram-negative, microaerophilic bacteria with a corkscrew-like morphology isolated from the gastric mucosa of cats and designated ASB1, ASB2 and ASB3, were subjected to a polyphasic taxonomic study.

The isolates grew on biphasic culture plates in microaerobic conditions at 37°C and exhibited urease, oxidase and catalase activity. They were also able to grow in colonies on dry agar plates.

Based on 16S rRNA gene sequence analysis, ASB1, ASB2 and ASB3 were identified as a member of the genus *Helicobacter* and showed 98 to 99% sequence similarity to *H. felis*, *H. bizzozeronii*, Candidatus *H. heilmannii*, *H. cynogastricus* and *H. salomonis*, five related *Helicobacter* species belonging to the “*Helicobacter heilmannii*” type 2 group and previously detected in the feline or canine gastric mucosa.

Sequencing of the partial *hsp60* gene demonstrated that ASB1, ASB2 and ASB3 constitute a separate taxon in the “*Helicobacter heilmannii*” type 2 group. The urease gene sequences of ASB1, ASB2 and ASB3 showed approximately 92% homology to the urease gene sequences of “Candidatus *Helicobacter heilmannii*” described by O’Rourke *et al.* (2004).

Protein profiling of the strains ASB1, ASB2 and ASB3 using SDS-PAGE also allowed to differentiate them from other *Helicobacter* species of feline or canine gastric origin.

The results of this polyphasic taxonomic study indicate that the cultured isolates constitute a new taxon corresponding to “Candidatus *Helicobacter heilmannii*” from cats but further investigations are still needed.