

## **Diagnosis of Genus *Helicobacter* through a hemi-nested PCR assay of 16S rRNA**

### **Abstract**

The present study aimed to establish a genus-specific PCR-based assay to detect *helicobacters* using 16S rRNA gene as the target template. We designed the hemi-nested primers based on sequences of 16S rRNA gene of 34 types of *Helicobacter* species. The inclusivity, sensitivity, and specificity of the PCR assay using these primers were examined in three different models, comprising feces simulated samples, BLAB/c mice infection model and clinic patients samples. The detection sensitivity of *Helicobacter pylori*, *Helicobacter hepaticus* and *Helicobacter bilis* strains from feces simulated samples was all 102 CFU/ml. We successfully detected *H. hepaticus* and *H. bilis* in the liver, cecum and feces of experimentally infected mice. *H. pylori* was successfully detected in the feces samples from 3 patients infected with *H. pylori* while not in the feces samples from 3 healthy human. However, the C97/C05–C97/C98 PCR assay detected *H. pylori* in the 2 positive samples. Due to the PCR assay's excellent inclusivity, high sensitivity and specificity it may be used to detect the presence of *Helicobacters*.