



# Importance of Opportune Diagnostic of Helicobacter Pylori in Public Health

Ramón Miguel Molina Barrios<sup>1</sup>, Juan Francisco Hernández Chávez<sup>1\*</sup> and Carlos Abraham Díaz Quiroz<sup>2</sup>

<sup>1</sup>Departamento de Ciencias Agronómicas y Veterinarias, Instituto Tecnológico de Sonora, México

<sup>2</sup>Departamento de Biotecnología y Ciencias Alimentarias, Instituto Tecnológico de Sonora, México

\*Corresponding author: Juan Francisco Hernández Chávez, Departamento de Ciencias Agronómicas y Veterinarias, Instituto Tecnológico de Sonora, Sonora, México

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## Introduction

Address about Helicobacter pylori infection (H. pylori), is to locate ourselves in a global context and regularly associated with socioeconomic level, poor hygiene conditions and a high degree of overcrowding: it is a major public health problem in vulnerable communities, not only in humans, but in the pets that coexist with them in such environments. The faecal-oral route being the most obvious transmission form.

Published data indicate that more than 50% of the world's population is colonized with this bacteria. This situation is aggravated as other reports mentioning a prevalence of at least 60% of Helicobacter spp in the canine population, actually is unknown how frequent is Helicobacter pylori is present in dogs. Hence, the importance of specific techniques for the specific determination of this bacterium in terms of genus and species. The bacterium colonizes the mucous membranes and gastric surface, as well as the glandular lumen. It is usually present in mucus where through its defense mechanisms evade the immune response by associating the presence of this bacterium with gastritis and gastric ulcers. Therefore, a fast and effective diagnosis to determine its presence and provide an effective treatment, has to be performed with fast and reliable techniques such as molecular biology. First, DNA extraction technique should be selected depending on the type of sample, since not all commercial extraction kits, have an adequate extraction of DNA. Using the accurate methodology (combination

of solvents, detergents and proteases), is essential to have good concentration of decontaminated DNA molecules. In the event of detection of Helicobacter pylori, the sample is extracted from the gastric mucosa of dogs with subclinical symptoms of gastritis and gastric ulcers. DNA amplification should be performed with PCR endpoint or real time depending on the availability of resources.

For DNA amplification of Helicobacter pylori is recommended to use specific primers that amplify preserved regions of specific genes, so the rRNA gene is the most used in the research work of this bacterium. Design and build nucleotide sequences of the rRNA gene is more recommended than select a nucleotide sequences from published reports since in our experience these sequences are not accurate. Therefore, every sequence must be aligned, and its specificity verified for both Helicobacter spp and Helicobacter pylori through tools available from the following link (<https://www.ncbi.nlm.nih.gov/nucleotide/>). The procedure of the PCR technique to determine H. pylori is the first choice to determine the presence of this bacterium in dogs and humans; however, not in all cases that have been reported so far, this bacterium has been found. The determination of H. spp, has a higher prevalence and frequency, in pets, especially those related to gastritis symptomatology and gastric ulcers. So, molecular biology tests, are techniques that can be used quickly and reliably, over other techniques that present limitation in terms of the proper interpretation of the results.



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