

Report Option - Campylobacter and Advanced Culture and PCR/DNA Methods

Table 1 ONLY: Penner, "The Genus Campylobacter: a Decade of Progress," in *Clinical Microbiology Reviews*, 1988, p. 157-172.

Paper: Linton *et al.*, "PCR Detection, Identification to Species Level, and Fingerprinting of Campylobacter... from Diarrheic Samples," in *Journal of Clinical Microbiology*, 1997, p. 2568-2572.

Section One – Big Picture:

- a. Using your textbook, describe the general features of this genus: domain, phylum, sub-group, Gram, shape, motility, basic growth requirements, and closest phylogenetic relatives.
- b. Using your textbook, describe the pathogenic features of C. jejuni: source, target system, timeline, and symptoms, and treatment. Using other sources that you cite, briefly describe additional pathogenic features of TWO non-jejuni species.

Section Two – Culture-Based Differential Tests – Penner Table 1:

- a. Using other sources that you cite, briefly explain and describe the following named tests: catalase, nitrate, H₂S, hippurate, indoxyl acetate, and susceptibility. Which have you done in our lab – or represent similar things you have done in our lab?
- b. Describe the simplest (i.e. least number of steps) FLOW CHART of phenotypic ID tests that distinguish: jejuni, hyointestinalis, concisus, pylori, and coli. This section needs to include a hand-drawn figure and a paragraph description/figure legend about your logic.

Section Three – Culture-Independent/DNA Tests - Linton:

- a. Using the paper and your textbook, explain – in your own words - what PCR and PCR-RFLP are and how their methods compare and contrast. Next, name and describe ALL PCR primer sets in this paper and indicate PRECISELY what they bind/target.
- b. Which table and/or figure is about PCR- and PCR-RFLP-related methods/results and what do each convey in terms of their take-home message about Campylobacter detection.