

Pleomorphic colonies of *Clostridium perfringens* isolated from intestinal content from healthy goats

ANA CLARA MIGNAQUI¹ Y ROMANELA BEATRIZ MARCELLINO²

¹ Instituto de Investigaciones Forestales y Agropecuarias Bariloche (IFAB). San Carlos de Bariloche, Río Negro, Argentina

² Estación Experimental Agropecuaria Bariloche (EEA-INTA Bariloche). San Carlos de Bariloche, Río Negro, Argentina

marcellino.romanela@inta.gob.ar

Clostridium perfringens is a ubiquitous worldwide distributed bacterium. It can be isolate from soil, water, gastrointestinal tract of healthy animals and humans, and from clinical specimens. Under certain circumstances it can produce a variety of diseases in goats and sheep such as enterotoxaemia and hemorrhagic enteritis due to the effect of different toxins that this bacterium can produce. The pleomorphic characteristics of *C. perfringens* colonies have already been described. However, colony description and photos are not always available. Here, we report pleomorphic colonies of *C. perfringens* isolated from intestinal contents of healthy goats. Intestinal content samples were collected from ten 2-month old goats at the local slaughterhouse. Samples were collected into sterile tubes and processed within the same day. For bacteriological analysis, 100 µl of intestinal content were seeded onto blood agar neomycin plates and were anaerobically incubated for 24 h at 37 °C. After incubation, colonies morphologically compatible with *C. perfringens* (medium-sized and with a characteristic double-zone hemolysis) were identified

by Gram staining and biochemical tests (catalase, lecithinase, reverse CAMP and aerotolerance). Once isolated and identified, purified colonies were sub-cultured onto blood agar plates. *C. perfringens* was isolated from all samples and in counts higher than 2.5×10^2 CFU/ml in 60 % of them. Different colony morphologies were identified (FIGURE 1). Some of the colonies were medium-sized, raised, bright, circular shaped, entire edged, with a characteristic double-zone hemolysis (FIGURE 1A and B colony T) while other colonies were bigger, flat, wavy edged with the double-zone hemolysis not so apparent (FIGURE 1A and B colony F). Interestingly, some *C. perfringens* isolates showed a single morphology while others showed mixed morphologies after sub-cultivation although they derived from one colony (FIGURE 1A).

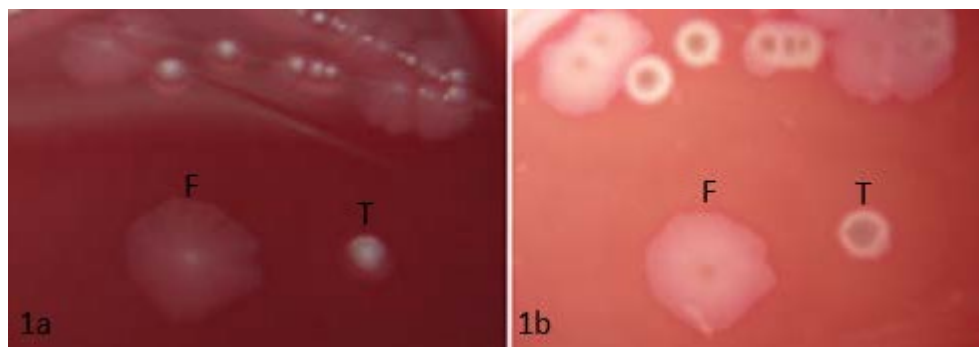


FIGURE 1. Pleomorphic colonies of *C. perfringens* isolated from intestinal content from healthy goats in Blood agar plates after 24 hours of anaerobic cultivation. **1aT)** Colony typically described as *C. perfringens*: medium-sized, raised, bright, circular shaped, entire edged, with a characteristic double-zone hemolysis and **1aF)** Flat colony: bigger, flat, wavy edged with the double-zone hemolysis not so apparent. **1b)** Show the same agar plate examined with transmitted light for show the zone hemolysis

Also, mixed morphologies between these two types of colonies were identified. Interestingly, the description of pleomorphic colonies of *C. perfringens* is useful since in the literature there is a lack of

information on its existence in the intestinal content of healthy goats. In addition, these results demonstrate that commonly healthy goats have a high isolation rate of this bacterium. This information is practical for the isolation and identification of *C. perfringens* in samples for diagnosis or research purposes.

Keywords: *Clostridium perfringens*, pleomorphic colonies, goats.