

Title: ANTIBACTERIAL ACTIVITY *in vitro* OF *Vaccinium oxycoccus* (CRANBERRY) SAMPLES ON *Corynebacterium diphtheriae*

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Abstract:

Corynebacterium diphtheriae, currently considered an emerging pathogen, is the causative agent of diphtheria, a disease that is related to the production of diphtheria toxin (DT). Although not considered an invasive microorganism, bacillus has been isolated from different infectious syndromes, besides the classical diphtheria, remaining as an important cause of morbidity and mortality worldwide. This work aimed to study the antibacterial activity *in vitro* of powder and juice from *Vaccinium oxycoccus* (cranberry), compared to isolated *C. diphtheriae* samples from nasopharynx of patients during the diphtheria outbreak of 2010 in the state of Maranhão. Six clinical isolated [MA19 (tox +); MA23 (tox +); MA52 (tox +); MA131 (tox +); MA136 (tox -) and MA150 (tox +)], and also 2 samples ATCC [27010 (tox -) and 27012 (tox +)], obtained from the bacterioteca of Respiratory and Systemic Bacterial Diseases Laboratory of Ceuma University, were analyzed by the Agar diffusion technique. The pure cranberry powder was purchased from a handling pharmacy and the juice from a commercial establishment of natural products. Filter paper discs were soaked with 10µL (2000µg/mL) of both solutions and deposited on Petri plates containing Agar Mueller Hinton previously seeded with the bacterial samples, which were then incubated at 37°C/48h. The tested extracts showed no antibacterial activity against *C. diphtheriae* samples, regardless of DT production. However, studies show the antimicrobial activity of cranberry against *Escherichia coli* and *Penicillium expansum*. It is important to note that natural products own secondary metabolites, which are substances that may favor the pharmacological activities. Nevertheless, there are quality and quantity variations of these substances, which interpose the biological effect.

Keywords: antibacterial activity, *Corynebacterium diphtheriae*, cranberry. medicinal herbs.

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