

CORYNEBACTERIUM AURIMUCOSUM – OPPORTUNISTIC PATHOGENS FOR HUMAN ISOLATED FROM CHICKEN CARCASSES

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Abstract: *Corynebacterium aurimucosum* is a facultative anaerobic bacteria, capable of adapting to different environmental conditions, including changes in oxygen levels. This allows them to survive and grow in a variety of environments, which can be beneficial for their survival and persistence in different niches. That has been isolated from various human clinical specimens, including blood, urine, and respiratory tract. It is not usually considered a common bacterium that contaminates food. There is some evidence to suggest that *Corynebacterium* species can be found in food and food-processing environments, including meat and dairy products, but the significance of these organisms as foodborne pathogens or contaminants is not well established. It is not usually considered a common bacterium that contaminates food. There is some evidence to suggest that *Corynebacterium* species can be found in food and food-processing environments, including meat and dairy products, but the significance of these organisms as foodborne pathogens or contaminants is not well established. Strains were identified by matrix-assisted laser desorption ionization time-of-flight mass spectrometry MALDI-TOF (Biotyper® Sirius One, Bruker) by matching the proteomic model with the libraries in BioTyper 2.0 software. Considering its importance in human pathology, *Corynebacterium aurimucosum* can be considered a true opportunistic pathogen, and in this context, we proposed to signal its significant presence on the surface of poultry carcasses.

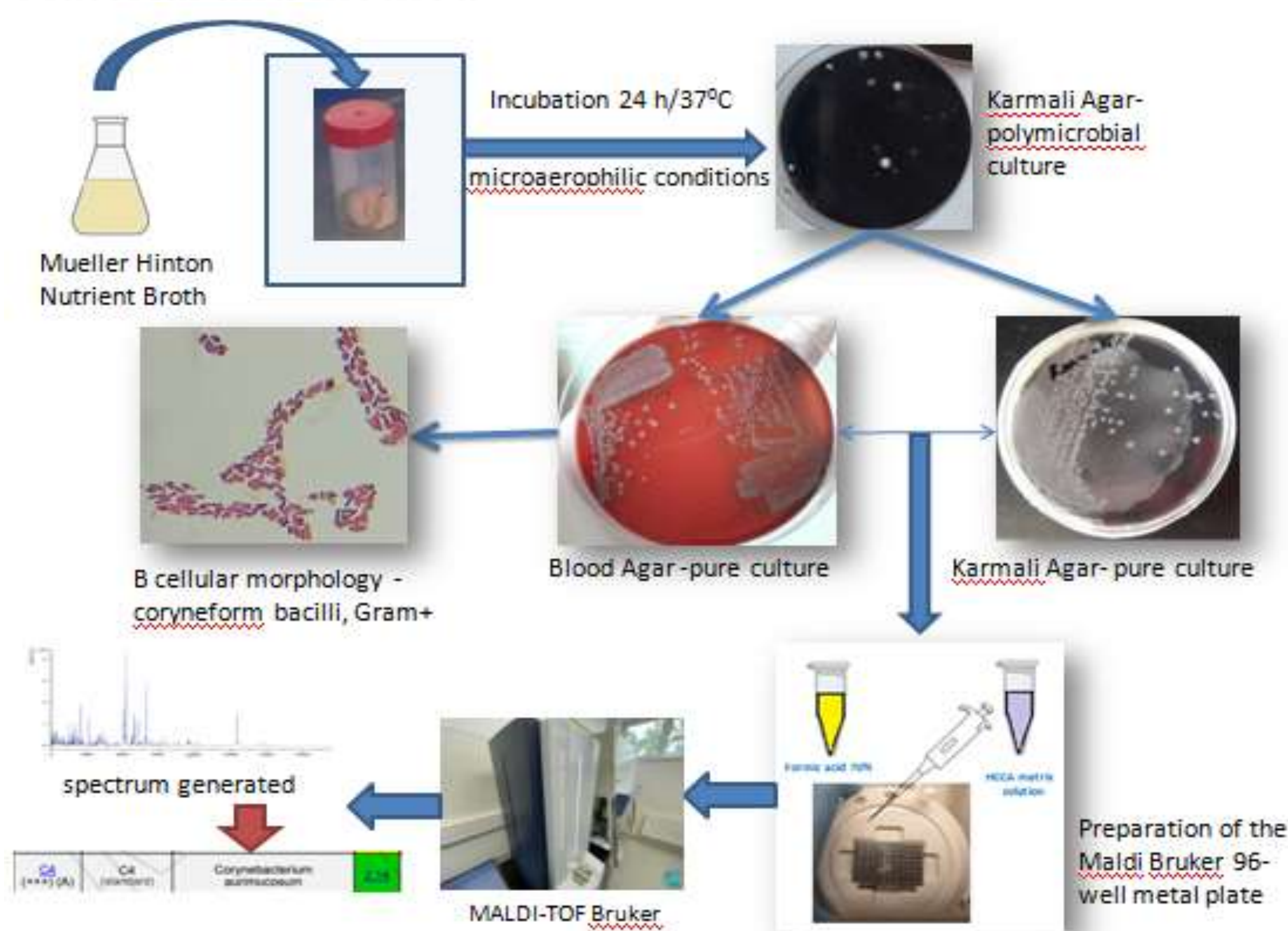
• Introduction

➤For the first time, *Corynebacterium aurimucosum* has been described in 2002, and has long been underestimated due to the unreliability of conventional identification methods. *Corynebacteria* are an important part of the commensal flora of the skin and mucous membranes.

➤Can be found in many secretions from the oropharynx and in pus, skin ulcers and eye infections and is predominantly isolated from human clinical specimens. Their form is either a slight stick shape or slightly curved, tapered at the ends or club-shaped, and they are often arranged in a V formation or as a parallel fence. They are non-motile, facultative aerobes or anaerobes, and they are catalase positive.

➤The pathology of these bacteria is still dominated by diphtheria, but recent publications in medical bacteriology have highlighted the importance of other corynebacteria with pathogenic potential. *C. aurimucosum* is not considered a zoonotic bacterial species but should be considered an actual opportunistic pathogen and which could be transmitted from one person to another through contaminated food.

Material and method



• Results and discussions

➤The species *Corynebacterium aurimucosum* was isolated from the poultry carcasses marketed in supermarkets, and its isolation was surprising because there are few reports of food contamination.

➤Isolation was performed under microaerophilic conditions in 24 hours at 37°C. “S” type colonies formed on the surface of the medium and after 48 hours were slightly mucoid, white-yellowish, circular, and about 0.1-0.2 mm in size.

➤Morphologically, coryneform bacilli were identified, with slightly deformed ends, grouped in palisades, Gram-positive.

➤The isolated pathogenic organism was identified by mass spectrometry MALDI-TOF (Biotyper® Sirius One, Bruker). The value of 2.14 was the best identification score for *Corynebacterium aurimucosum*.

➤While it may not possess a well-characterized set of pathogenicity factors like some other corynebacteria (*C.diphtheriae*, *C. ulcerans*, *C. ureolyticum*, et) , there are certain aspects that contribute to its ability to cause infections: **adherence, formation biofilm, immunoevasion** (mechanisms to evade or subvert the host immune system, allowing it to establish infection and persist).

➤It's important to note that more research is needed to fully understand the pathogenicity factors and mechanisms of *Corynebacterium aurimucosum*, as it is not as extensively studied as some other bacterial pathogens.

• Conclusions

➤MALDI-TOF has revolutionized many aspects of clinical microbiology, including routine species-level identification of suspicious diphtheroid isolates and the establishment of data sets for clinical research.

➤Reporting this case has the character of informing regarding the presence on the commercialized poultry carcasses, of some contaminating microorganisms, such as *Corynebacterium aurimucosum*, reported in recent years as pathogenic.