

# DETECTION OF ANTIMICROBIA ACTIVITY IN SPONGE SPECIES FROM TUNISIAN COAST (CENTRAL MEDITERRANEAN)

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## Abstract

To investigate antibacterial activities in sponges, we test 53 samples collected from different areas in Tunisian coasts. Three species (*Hymeniacidon* sp, *Fasciospongia* sp and *Aplysina aerophoba*) shown antibacterial activities against several Gram neagive pathogen bacteria. Sponge species represent source of several antibacterial compounds.

**Keywords:** Coastal Waters, Bacteria, Biotechnologies

## Introduction

Sponges were described as source of different bioactive compounds (antiviral, antitumoral, antibacterial..etc) with great benefit for pharmaceutical industry. Previous studies highlighted antimicrobial activity of sponges and pointed them as most significant invertebrate producers [1]. Here we report results of antimicrobial activities revealed from Tunisian sponge species.

## Materials and methods

Sponges (53 samples) were collected in shallow coastal water (2 and 6m) from different Tunisian coastal areas. Their identification was based on morphology of spiculs and microscopic observations of their skeletal structures. Extraction of their bio products was realized using 2 solvents: acetone and methanol. All extracts obtained were tested by diffusion method against different bacterial species: *Vibrio alginolyticus*, *Pseudomonas aeruginosa*, *Aeromonas hydrophila*, *Escherichia coli* and *Salmonella Typhimurium*.

## Results and discussion

Sponges collected (53 samples) belonged to order of Dictyoceratida and were subdivided in 4 families: *Irciniidae*, *Thorectidae*, *Halichondriidae* and *Spongidae*. Three isolated species shown large inhibition of bacteria: *Hymeniacidon* sp, *Fasciospongia* sp and *Aplysina aerophoba* with strong activities on all pathogens tested.

Inhibition obtained was variable depending on bacteria species, category of solvent and sampling areas. Thus, most significant activity was reported for *Fasciospongia* sp on *Salmonella typhimurium* using acetone solvent extract. Such results were in agreement with [2]. Depending on sampling area, *Fasciospongia* sp from Kerkennah and *Hymeniacidon* sp from Salammô have most significant activities compared respectively to those of Bahiret El Biban and Korbous. Since local sponge species seemed to harbour interesting bioactive components, we continue further investigations on the specific bioactive compounds and their eventual relation with epibionts.

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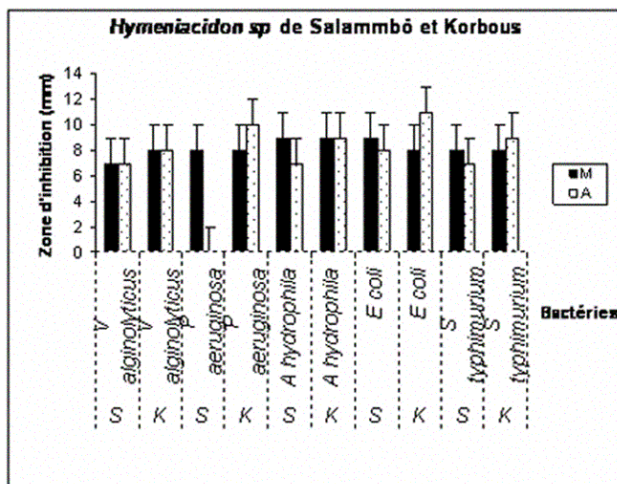


Fig. 1. Identification of antibacterial activity of *Hymeniacidon* sp from Salammô and Korbous against different bacterial species. M: Methanol extracts, A: Acetone extracts

## References