DETECTION OF ANTIMICROBIAL 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, Fsciospongia sp and Aplysina aerophoba) shown antibacterial activities against several Gram negative 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, Fsciospongia 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 Fsciospongia sp on Salmonella typhimurium using acetone solvent extract. Such results were in agreement with [2]. Depending on sampling area, Fsciospongia sp from Kerkennah and Hymeniacidon sp from Salammbo 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.

References