**VIBRIO SP. AS A POTENTIAL PATHOGEN OF BLACK BAND DISEASE (BBD) IN RED SEA CORALS**

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**Background:** Ecological stress factors contribute to the appearance and progression of BBD in corals¹. A primary pathogen of BBD has not yet been identified and this disease is believed to be caused by a diverse microbial consortium¹. It has been suggested that the BBD pathogen may be a pathogenic heterotrophic bacterial species². *Vibrio* sp. was found to be a causative agent of several coral diseases.

**Objectives:**

1) BBD microbial component changes in Eilat reef corals

2) *Vibrio* sp. identification and characterization

**Methods:**

1) Seasonal changes in microbial diversity were determined using 16S rRNA clone libraries.

2) Bacteria isolation was carried out by using selective media and subsequent classification by comparison of 16S rRNA genes.

3) Isolates characterization was done by metabolic and proteolytic tests.

**Results:**

1) Seasonal dynamics in diversity of BBD microbial mat was observed;

2) Isolated *Vibrio* sp. were found to have high homology (≥99%) to previously documented BBD associated bacteria from Caribbean, Bahamas and the Red Sea, and were similar to several known coral pathogens such as *V. corallilyticus*;

3) Proteolytic activity of chosen isolates changed as a function of temperature.

**Conclusions:**

1) High levels of proteolytic activity with correlation to temperature may be a trigger for tissue necrosis and ensuing progression of the BB consortium.

2) *Vibrio* sp. could be a major contributor to the tissue necrosis in the BBD.

**References:**

¹Richardson LL (2004) Black band disease, In Coral Health and Disease, Rosenberg E and Loya Y (eds), Heidleberg, Germany Springer-Verlag