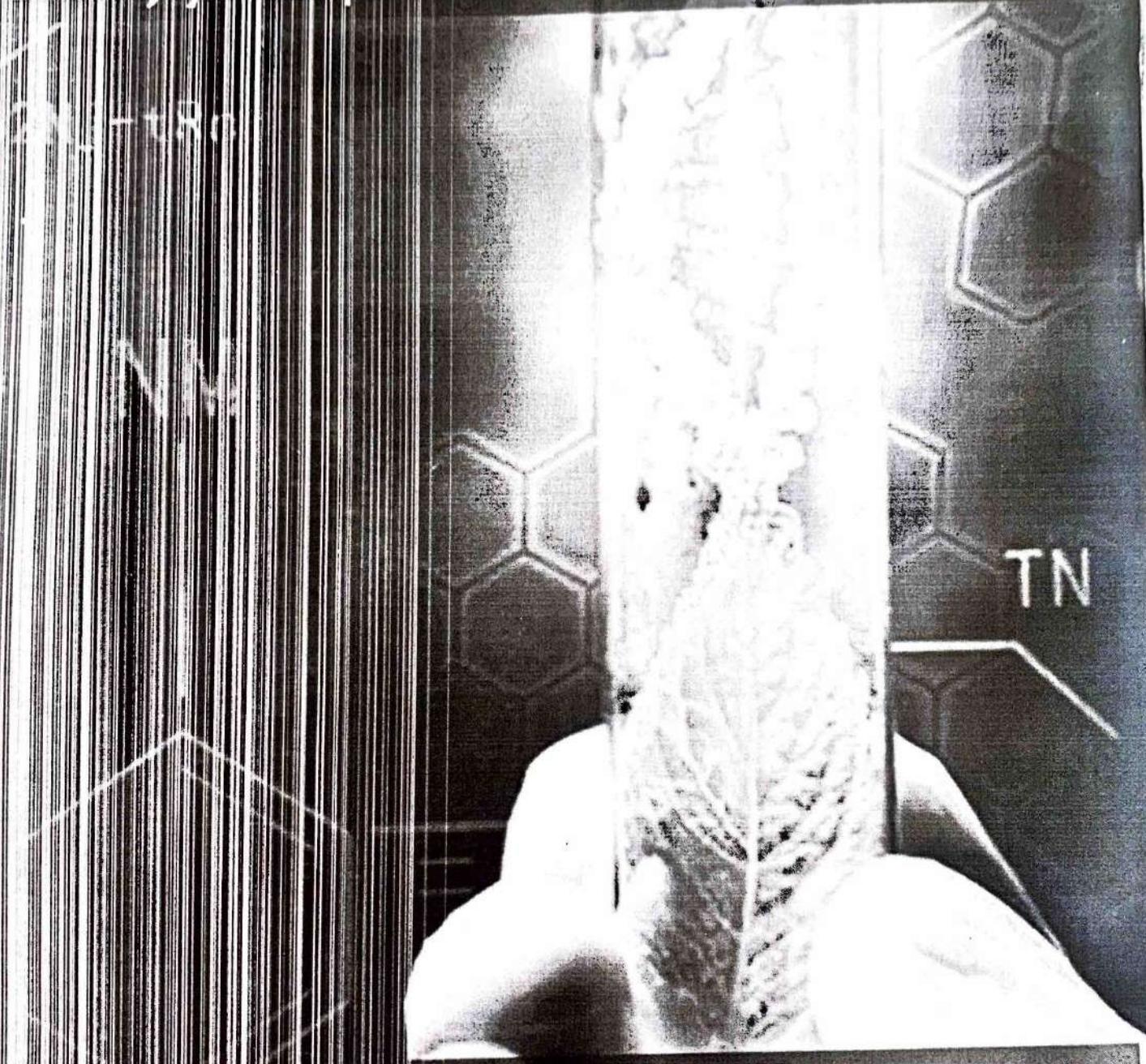


Innovations and Applications in Life Sciences

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Compiled & Published by
St. Pious X Degree & PG College for Women,
Hyderabad, Telangana, India &
IMIRE Institute of Higher Education & Research, India

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Publications and Applications in Life Sciences

ISBN 978-93-86435-72-9

Chapter: 6

PROTEIN PROFILING OF PSEUDOMONAS ASSOCIATED WITH FISH PATHOGENS

Ravi D. Barde, S. M. More

Introduction: *Pseudomonas* sp. is one of significant fish pathogens among the etiological agent of bacterial fish diseases. The pathogen causes ulcer formation diseases together with ulcerative syndrome, tail and fin rot, gill rot and dropsy¹. The bacterial pathogen has several modes to cause disease in their host. Adhering to the host and joining the host tissues are the most essential steps in commencing infections. Virulent bacteria secretes tissue degrading enzymes and toxins to evade the immune defense response of the host. Cell surface structure like pili works as adhesion factors for infection process as well as extracellular products have been studied widely in bacterial fish pathogens². Several virulence factors have also been described for bacterial fish pathogens like EPS present in the capsule or lipopolysaccharides in cell wall are related to virulence in pathogens³.

Proteins comprise 55% of the dry mass in bacterial cells and can be separated by electrophoretic techniques such as polyacrylamide gel electrophoresis (PAGE) of whole-cell soluble proteins to achieve a protein electrophoreogram⁴. The electrophoretic protein patterns can be used to assess similarity among strains at species and subspecies levels. Also, protein profiles combined with computer-aided analysis have potential in phylogenetic and taxonomic studies. Separation of cellular proteins by electrophoresis is a sensitive technique that can provide information of strains at the sub species level. Total cell protein separation by SDS-PAGE was used in bacterial identification⁵. The cell envelope protein fraction had been used to characterize *Pseudomonas* spp. and to screen the bacteria from different source and locations⁶. This study was aimed to evaluate the degree of phenotypic and genotypic diversity within a selection of closely related *Pseudomonas* isolates sampled from fish.

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Proceedings of the International Conference on Recent Trends in Botany, Zoology, Microbiology & Biotechnology - Andhra Loyola

Nov 01-02,2019



Organized by

**Andhra Loyola College (Autonomous)
Vijayawada, Andhra Pradesh, India &
MRF Institute of Higher Education & Research, India**

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