

ISOLATION, IDENTIFICATION AND CHARACTERISATION OF MICRO-ALGAE FROM DIFFERENT SOURCES

Microalgal strains were identified according to the morphological features of species using standard botanical approaches. Classic morphological taxonomy includes the use of traits observable with light microscopy such as arrangement of cells, shape and size of cells, pattern of cells, and mode of division.

The use of molecular markers for identification and characterization of microalgae has gained considerable significance. Molecular markers can effectively complement morphological identification and characterization of an organism. 18S rDNA and Internal Transcribed Spacer (ITS) regions sequences has most frequently been used for phylogenetic analysis.

Materials and methods

1. Electron microscopic analysis

The ultra structural features of the cells can be studied using Transmission Electron Microscope

2. Molecular Characterization PCR Amplification

The molecular characterization of isolated microalgal strains will be done by 18S rRNA sequence analysis using standard methods (Liu et al., 2006). For 18S rRNA sequence analysis, following procedure was applied to get the phylogeny of isolated strains. Isolation of Genomic DNA Total genomic DNA from microalgal cells was extracted according to the modified hexadecyltrimethyl ammoniumbromide (CTAB). PCR (Polymerase Chain Reaction) was carried out and Amplification was done

3. Sequence Alignment and Phylogenetic Analysis

Identification of the microalgal cultures will be followed phylogenetic analysis. A phylogenetic tree was constructed by comparing other published microalgal 18S rRNA gene sequences from Genbank .

Sequencing Amplified ITS regions of the ribosomal DNA sequenced with the help of ABI Prism DNA sequencer

4. Phytochemical analysis

- Vitamins
- Antioxidants

- Protein
- Total lipids
- Carbohydrates
- Results
- pigments

Results

Based on the different methods used, algae can be identified, characterized.

The phytochemical analysis gives the different compounds and its amounts.

Based on the results we can use the identifies microalgae for

- Fuel Production,
- Food Supplements
- Fertilisers
- Carbon sequestration
- SCPs etc

References

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