Natural blue food color from cyanobacteria *Spirulina platensis*

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Blue colour is an important part of the food color palette used in products such as ice cream, confectionaries, chewing gum and soft drinks. Available blue colors in the market are chemically synthesized of which EU have the following: Patent blue V, Indigotine, Brilliant blue FCF. Recently concerns have been raised about the safety of synthetic blue colors [1] and together with the growing demand among consumers for natural food colors this has increased the need for the development of natural blue colors.

**INTRODUCTION**

Cultivation of *Arthrospira platensis*

**EXPERIMENTAL**

**Composition of Linablue**

Additives removal from Linablue

- Linablue is washed with methanol to remove additives; methanol selectively dissolves D-trehalose and trisodium citrate.
- Procedure included stirring 50 g Linablue in 400 mL methanol for 30 min.
- Procedure is repeated 5 times; 20 g additive free Linablue is obtained.
- Methanol washing also aid in denaturation of phycocyanins as depicted below.

Purification of methanolysis mixture

- Methanolysis mixture is purified by using flash column chromatography
- RP C-18 column with acetone and water is used as mobile phase
- 85mg phycocyanobilin is obtained

**Cleavage of Phycocyanobilin (Methanolysis)**

- 10 g washed Linablue boiled in 400 mL methanol for 16hrs at 65 °C
- Samples are taken at regular interval from mixture for HPLC analysis
- After 16hrs, methanol solution is analyzed with HPLC and LC-MS

**FUTURE PERSPECTIVES**

- Physico-chemical properties of phycocyanobilin will be determined
- Further optimization of cleavage and purification process to obtain pure phycocyanobilin will be done.
- Stabilization and intensification of phycocyanobilin color will be attempted through its copigmentation with naturally occurring molecules.

**REFERENCES**