RESEARCHING THE MOLECULAR COMPONENTS OF FLOURISH USING MASS SPECTROSCOPY

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Importance

The gastrointestinal microbiota found within model organisms have been widely studied. Disorders of these microbiota have been linked to a variety of disorders such as:

- Obesity
- Inflammatory bowel disease (IBD)
- Crohn's disease
- Irritable bowel syndrome (IBS)

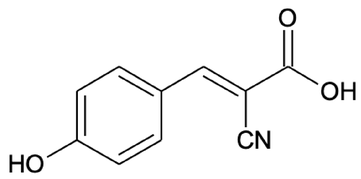
Recent studies of gut bacteria wtithin humans have found possible links between gut health and:

- Autism
- Alzheimers disease
- Schizophrenia
- Parkinson's disease

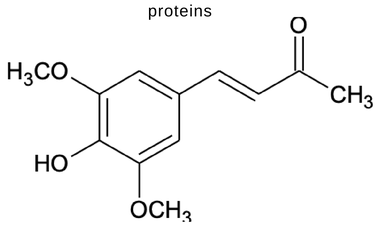
Why Flourish

Flourish is a probiotic supplement produced and sold by Entegro Health. Flourish is bottled in a stable liquid state and is claimed to be made out of only thirteen components. Understanding how Flourish is able to maintain a stable state with such few components will help further the understanding of signaling between gut bacteria and how it influences the rest of the body.

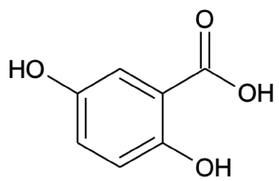
α-Cyano-4-hydroxycinnamic acid / CHCA
peptides

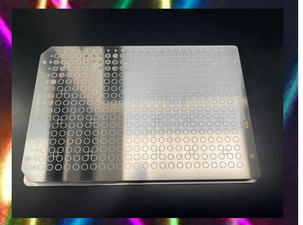


3,5-Dimethoxy-4-hydroxycinnamic acid / Sinapinic Acid
proteins



2,5-Dihydroxy-benzoic Acid / DHB
Jack of all trades





Mass Spectroscopy

Matrices

- Used to help molecules 'fly'
- Types of matrices used:
  - CHCA (peptides)
  - Synaptic acid (proteins)
  - DHB (Jack of all trades)

Platting Techniques

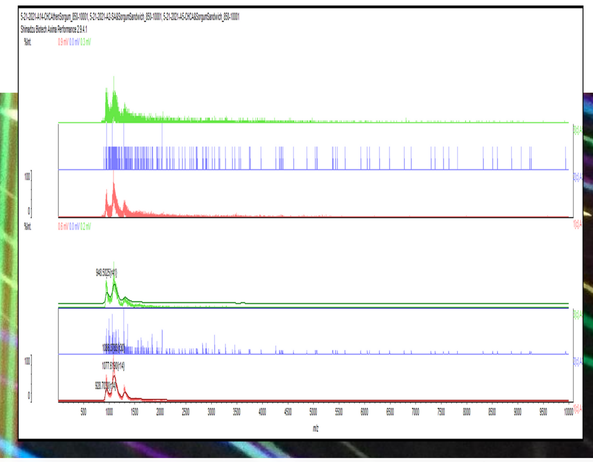
- Ordering of matrix and substance
- Types of techniques:
  - Matrix then substance
  - Matrix then substance then matrix - 'Sandwich'
  - Substance and matrix mixed on plated
  - Substance and matrix mixed in tube

Results

The collected data showed no signs of chemical messengers or the presence of molecules beyond sorgum or the matrices used within the permitted range.

Sorgum:

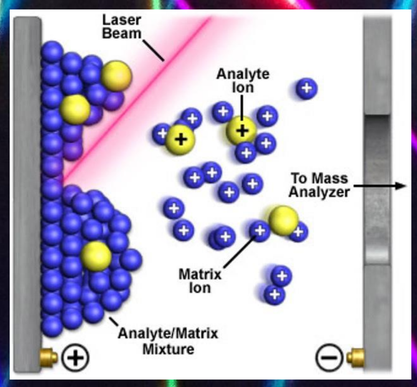
- Background of Flourish
- Sucrose rich syrup
- Dilution

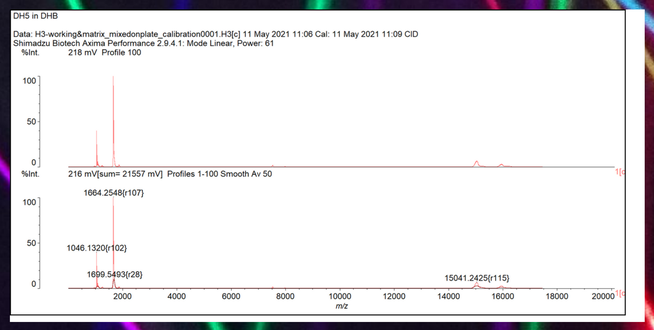


Future Research

Though our results were inconclusive and showed no sign of chemical messengers or molecules, the prospects of these findings could lead to future research on the following ways:

- Look for medium range molecules being released by the probiotic.
- Look for large range molecules being released by the probiotic.





Acknowledgments

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