

Review of: "The Consumption of Iceberg Lettuce May Reduce The Adhesion of Dietary Fat to The Mucus Surface of The Stomach Barrier Lining Decreasing The Risk of Triggering Acute Gastroesophageal Reflux"

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Potential competing interests: No potential competing interests to declare.

Comments

Authors have hypothesized that consumption of Iceberg lettuce (IL) could reduce acute gastroesophageal reflux (GER) and the development of gastroesophageal reflux disease (GERD) due to the adsorption of fats to the IL leaf surface. They performed experiments with both liquid and solid fats from various dietary sources like olive oil, butter, lamb fat, and lard for adsorption, exposing them to a water stream and dishwashing detergent to test the surfactant properties.

Thus, the experiments concluded that lettuce, with its large waxy surface area, can adsorb fat and keep fat suspended in solution, protecting the lining from fat adsorption and reducing the probability that it will adhere to the mucus surface of the stomach barrier lining, protecting the underlying surfaces and reducing access by trigger foods, thereby preventing GER and GERD.

Strengths-

1. An interesting preliminary study to indicate the effects of iceberg lettuce (IL) and the benefits of its inclusion in a regular diet, especially for individuals sensitive to GER and GERD.
2. The simplicity of the experiments performed was interesting to observe, and the results inferred were good.
3. The fat to IL interaction and properties were studied in the presence of detergent to mimic a gastric surfactant, which was simple and cost effective.

Limitations-

1. The properties were evaluated for the physical and biological nature of the IL, but there is a paucity of experiments to show real physiological phenomena with respect to gastric protection in terms of interaction with the stomach layer.
2. The study has limitations in its extrapolation to human physiology.
3. Further mechanistic study with cell culture or animal models needs to be done to arrive at conclusions.

Corrections -

1. References need to be included in @section 2.3 of the 'materials and methods.'

2. The abstract has repeated statements.

Suggestions-

1. A two-chamber *in vitro* experiment could have been designed to show the real-time passage of fats and the non-adherence of the mucus membrane.
2. A Human Gastric Simulator (Riddet Model) could have been used to strengthen the conclusions. (Reference: PMID: 29787060)