

Summary Of TNO Report On Fat Binding Capacity Of a Patented Fibre Complex Of *Opuntia Ficus Indica* In Presence Of An American Breakfast

The TNO in-vitro gastrointestinal models simulate in high degree the successive dynamic processes in the stomach, the small intestine (TIM-1) (Minekus et al., 1995; Havenaar and Minekus, 1996; 1998) and the large intestine (TIM-2) (Minekus et al., 1999, Venema et al., 2000). These systems are unique tools to study the stability, release, absorption and bioconversion of nutrients, chemicals and pharmaceuticals in the gastrointestinal tract.

The aim of the study was to determine the fat binding behaviour of the patented fibre complex of *Opuntia ficus indica*, added to an American breakfast, during passage through the gastric and small intestinal model.

Methods:

The experiments were performed under the average conditions of the gastrointestinal tract as described for healthy young adults after the intake of a breakfast. The set-points in the computer protocol dictated the transport of the meal, secretion rates and pH values for each compartment in time.

A specific absorption system is used to remove products of lipid digestion and lipophilic compounds that are incorporated in mixed micelles. The removed material was collected to determine the bio accessible fraction. The tests were performed in duplicate, for 4 hours.

The efficacy of patented fibre complex of *Opuntia ficus indica* to bind fat was tested by measuring the bio-accessible lipid fraction at the dosage of 2g of patented fibre complex of *Opuntia ficus indica* preliminary mixed with sunflower oil (3g), and added to an American breakfast.

Conclusion:

The results confirm properties patented fibre complex of *Opuntia ficus indica*, so confirming previous results obtained with the same TNO model. Actually, associated with an American breakfast intake, the patented fibre complex of *Opuntia ficus indica* absorbs about 23% of total fatty acids compared to a control. This study is particularly interesting because the fat binding capacity of patented fibre complex of *Opuntia ficus indica* is confirmed when the fibre complex is added to a complex food formula, the FDA American breakfast.