



Glycaemic and insulinaemic indexes of NUTRIOSE®FB 06 in healthy subjects

Y. DONAZZOLO¹, X. PELLETTIER¹, I. CRISTIANI² and D. WILS²
1- OPTIMED, 2 avenue de Vignate, 38160 GIERES France • 2- ROQUETTE Frères, Toxicology and Nutrition Department, 62080 LESTREM Cedex, France

INTRODUCTION

NUTRIOSE®FB 06 is a weakly digested food dextrin produced from wheat starch. Unlike standard maltodextrin, this food ingredient contains glucidic linkages different from the α -1,4 and the α -1,6 “digestible” linkages present in starch. This is the reason why only 15% of NUTRIOSE®FB 06 are digested in the small intestine. This weak digestibility may have an impact on post-prandial glycaemia after ingestion of NUTRIOSE®FB 06. The aim of this study was to assess the glycaemic and insulinaemic indexes after ingestion of NUTRIOSE®FB 06 in healthy subjects.

MATERIALS AND METHODS

Subjects

- ➔ 6 healthy men
- ➔ Age: 18-40 years
- ➔ BMI: 19-25 kg/m²

Design

- ➔ Randomized cross-over study
- ➔ 3 test periods

Methodology

- ➔ After overnight fasting, subjects ingested either 50g dextrose or 50g NUTRIOSE®FB 06 in 250 mL potable water.
- ➔ The glycaemia and insulinaemia were observed for 4 hours.
- ➔ Blood was sampled at -15, -10, 0 (time of ingestion of the product), 15, 30, 45, 60, 90, 120, 150, 180 and 240 min.
- ➔ Minimal wash-out of 3 days.
- ➔ Recording of gastro-intestinal events.

RESULTS AND DISCUSSION

Compliance

- ➔ The compliance was very good. No subject left the study.
- ➔ No adverse clinical event such as gastro-intestinal complaints occurred with either product.

Glycaemic index (Fig. 1)

- ➔ Results are presented in Table I.
- ➔ The glycaemic response following NUTRIOSE®FB 06 ingestion is weak. The maximal glycaemia is 5.9 mmol/L versus 8.8 mmol/L after dextrose ingestion ($p < 0.05$).
- ➔ The glycaemic index calculated for NUTRIOSE®FB 06 is 25%.

Insulinaemic index (Fig. 2)

- ➔ The insulinaemic response following NUTRIOSE®FB 06 ingestion is very weak. The insulinaemic peak is 12.3 mIU/L versus 47.8 mIU/L after dextrose ingestion ($p < 0.05$).
- ➔ The insulinaemic index calculated for NUTRIOSE®FB 06 is 13%.

Table I: Summary of results

	Glucose	NUTRIOSE®FB 06	p
Peak glucose (mmol/L)	8.8 ± 0.4	5.9 ± 0.2	0.03
Peak insulin (mIU/L)	47.8 ± 4.2	12.3 ± 0.9	0.03
Incremental glucose area	228.7 ± 31.1	56.8 ± 11.5	0.03
Incremental insulin area	2587.8 ± 271.7	304.2 ± 39.4	0.03

Fig. 1: Evolution of glycaemia after ingestion of NUTRIOSE®FB 06 or dextrose

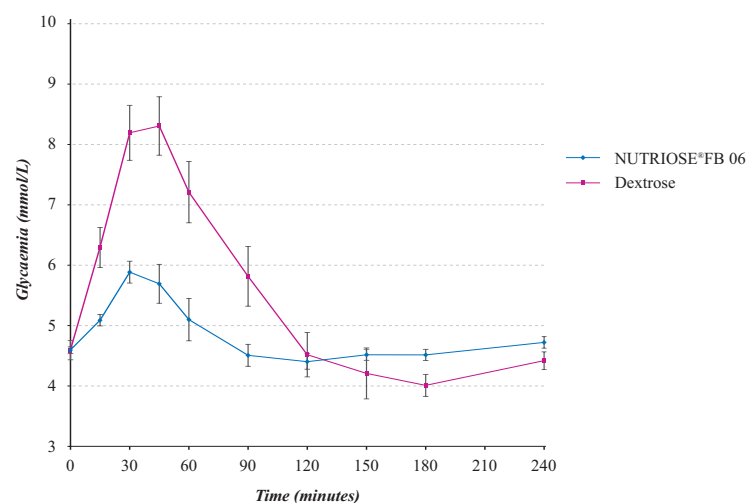
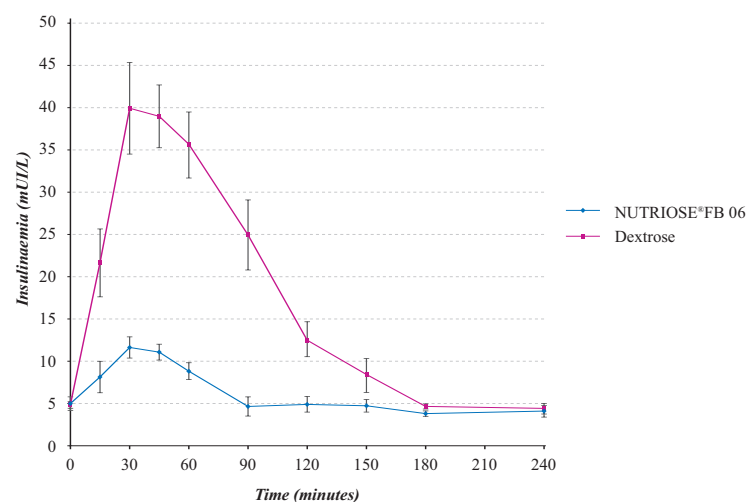


Fig. 2: Evolution of insulinaemia after ingestion of NUTRIOSE®FB 06 or dextrose



CONCLUSION

NUTRIOSE®FB 06 is a fermentable carbohydrate with very low glycaemic and insulinaemic indexes compared to dextrose, cooked starch or standard maltodextrins (whose indexes are close to 100%).

These results indicate that the dietary fibre NUTRIOSE®FB 06, which is a food ingredient usable in large amounts due to its very good digestive tolerance, may be of potential interest in diabetes prevention.

Glycaemic and insulinaemic indexes of NUTRIOSE®FB 06 in healthy subjects

The information contained in this document is to the best of our knowledge true and accurate but all instructions, recommendations or suggestions are made without guarantee.

Since the conditions of use are beyond our control, we disclaim any liability for loss and/or damage suffered from use of these data or suggestions.

Furthermore, no liability is accepted if use of any product in accordance with these data or suggestions infringes any patent. No part of this document may be reproduced by any process without our prior written permission.

© Roquette Frères S.A. - 09/04