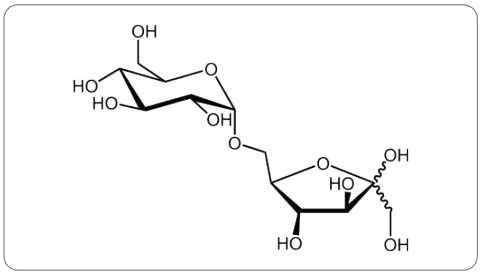
Slow Calorie®

Perfect solutions for sugar reduction
Palatinose syrup

What is Palatinose?

Palatinose is an isomer of sugar, which is composed of 1:6 bonds of glucose and fructose. It continually energizes the body and brain slowly digesting • absorbing with suppressing rapid increase of blood sugar compared with sugar, considering being absorbed 5 times slower than sugar because of 1: 6 bonding degree higher than 1:2 bonding.



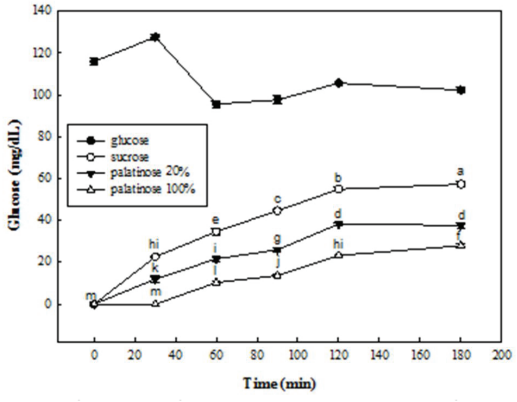
Picture 1. Structure of Palatinose

What is Palatinose Syrup?

- Palatinose includes various physiological functions, but it has less than 50% sweetness when comparing with sugar.
- Palatinose syrup includes more than 20% of Palatinose and has an exceptional sweetness compared to conventional high purity Palatinose.
- Palatinose syrup is Low GI syrup(GI44) that does not increase blood sugar rapidly.
- It is the ideal sweetener when replacing sugar and can be applied to various fields by overcoming the drawbacks of low solubility.

Decomposition Rate of Palatinose

The Palatinose in Palatinose syrup slowly raises glucose levels in the blood being decomposed more slowly than sugar.



Picture 2. Changes in Glucose in Mouse Blood

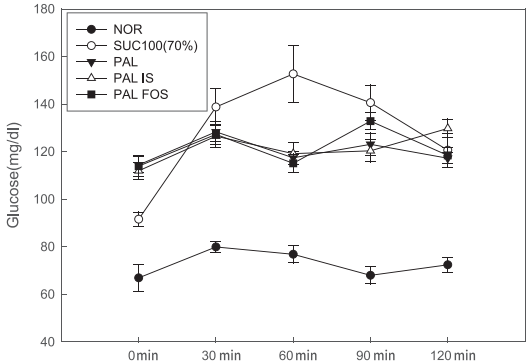
Product Line of Palatinose Syrup

Name of Product	Major Sugar Composition	
Palatinose-L	Palatinose	20-22%
	Sugar	70~78%
Palatinose-IS	Palatinose	20~22%
	Glucose Fructose	70~78%
Palatinose-FOS	Palatinose	20~22%
	FOS	18~30%
	Sugar Glucose Fructose	50~60%

- Palatinose-L is the basic type, which is available for general food and has 20% sugar reduction effect.
- Palatinose-IS contains isomerized glucose syrup and has hybrid energy effect.
- Palatinose-FOS is functional syrup, which has blood sugar control and prebiotics effect.

OGTT(Oral Glucose Tolerance Test) of Palatinose Syrup

It shows that the blood sugar level was significantly lower than the sugar group as the results of blood glucose measurement for 120 minutes at intervals of 30 minutes after oral administration of three kinds of Palatinose syrup to the experimental mouse.



Picture 3. Glucose Changes According to Palatinose Syrup

Blood Sugar Change of Palatinose Syrup

As the result of comparing blood glucose levels before and after ingestion of Palatinose-L among 10 normal healthy subjects aged 30.8 years and over, Palatinose-L showed lower blood glucose levels than glucose and sugar groups.

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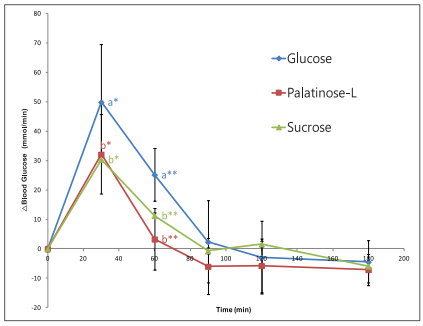
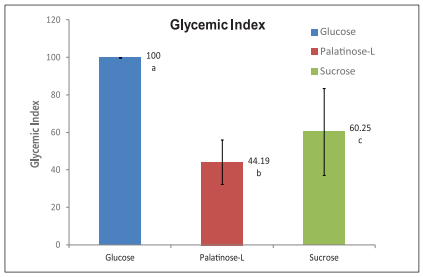
Blood Sugar Change (Human Body) of Palatinose Syrup



Picture 4. Blood Sugar Change in Human Body

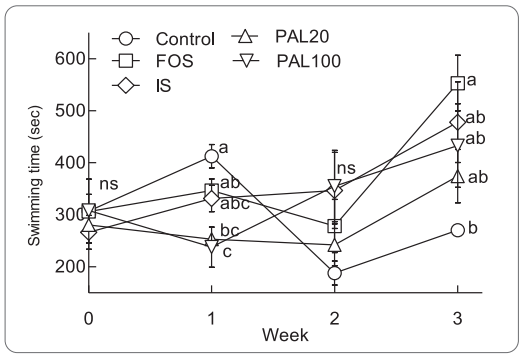


Picture 5. Comparison of Glycemic Index

The experiment confirmed that GI index of Palatinose-L is 44.

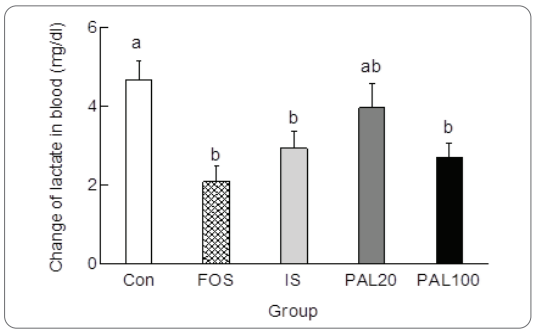
Exercise Capacity Improvement of Palatinose Syrup

As the result of comparing the swimming time with dextrin group after 1 week of adaptation period subject to the experimental mouse, Palatinose-FOS and Palatinose-IS showed outstanding improvement ability.

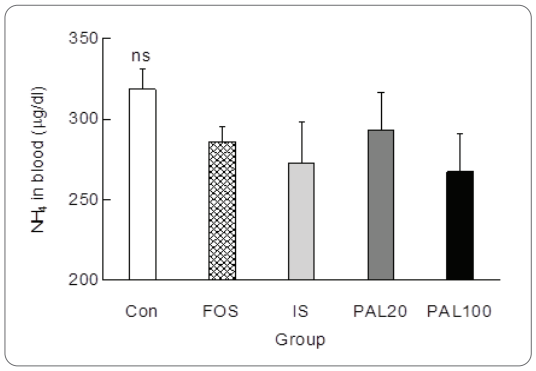


Picture 6. Change of Swimming Time

It confirms that Palatinose group affects the increase in athletic performance showing that Palatinose syrup group tended to be lower in control of blood lactic acid and NH4.

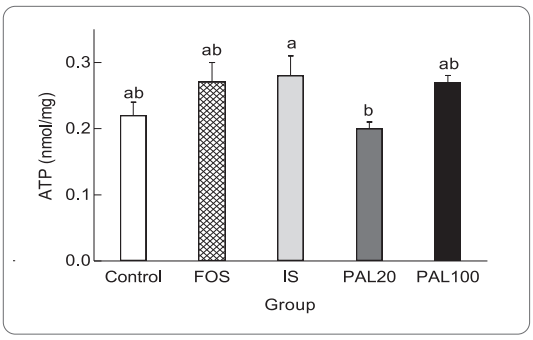


Picture 7. Change of Lactic Acid in Blood



Picture 8. Change of NH4 in Blood

As the result of comparing ATP after exercise as Picture 9, Palatinose-IS can be expected to improve the athletic performance considering the highest ATP in Palatinose-IS group despite spending a lot of energy for a long time.



Picture 9. ATP after Exercise

Safety of Palatinose Syrup

Test for Stability		Result
General Toxicity (Single Oral Administration)		No Effects on mortality and general symptoms,weight and autopsy
Genot-oxicity	Return Mutation	No return colonies counted
	Chromosomal Abnormality	Chromosome anomalous cells not identified
	Micronucleus Test	No general symptoms and no animal deaths

Product Information

Item	Quality Standard		
	Palatinose-L	Palatinose-FOS	Palatinose-IS
Appearance	Liquid	Liquid	Liquid
Foreign material	Non-detection	Non-detection	Non-detection
Solids content (brix)	≥ 70.0	≥ 70.0	≥ 70.0
PH(10% Solution)	4.0~7.0	4.0~7.0	4.0~7.0
Total Palatinose (DB%)	≥ 20.0	≥ 20.0	≥ 20.0
Heavy Metal	≤ 10.0	≤ 10.0	≤ 10.0
Total Fructooligosaccharide (DB%)	-	≤ 10.0	-
Fruit Sugar(DB%)	-	-	≥ 30.0
E.coli			
Packing Unit	24kg(PE) 1ton(IBC)	24kg(PE) 1ton(IBC)	24kg(PE) 1ton(IBC)

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