

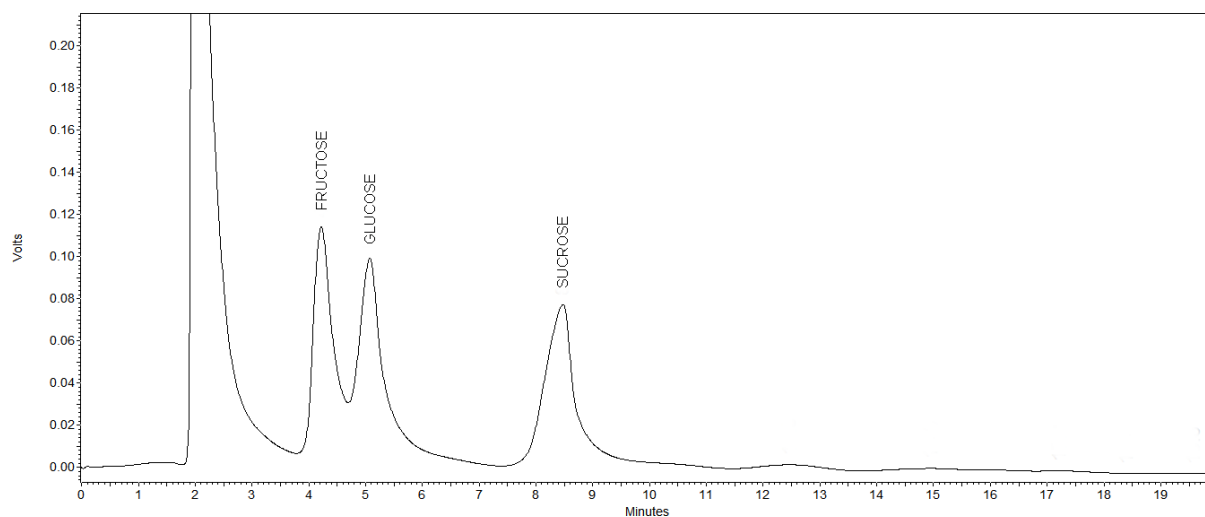


Figure S1. Combination of fructose, glucose, and sucrose standards.

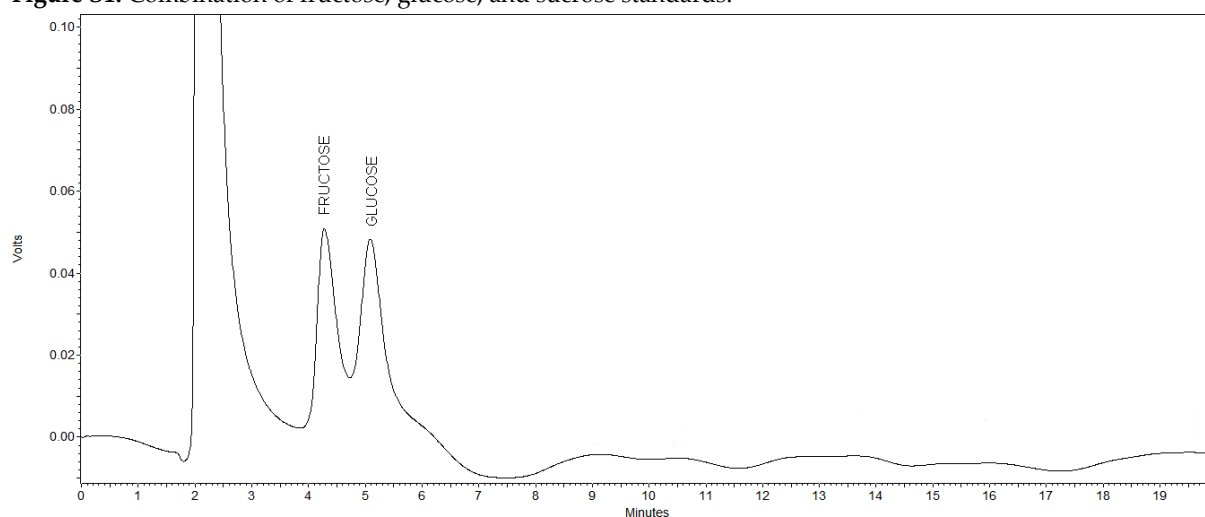


Figure S2. Chromatographic profile of fructose, glucose, and sucrose from *G. americana* L.

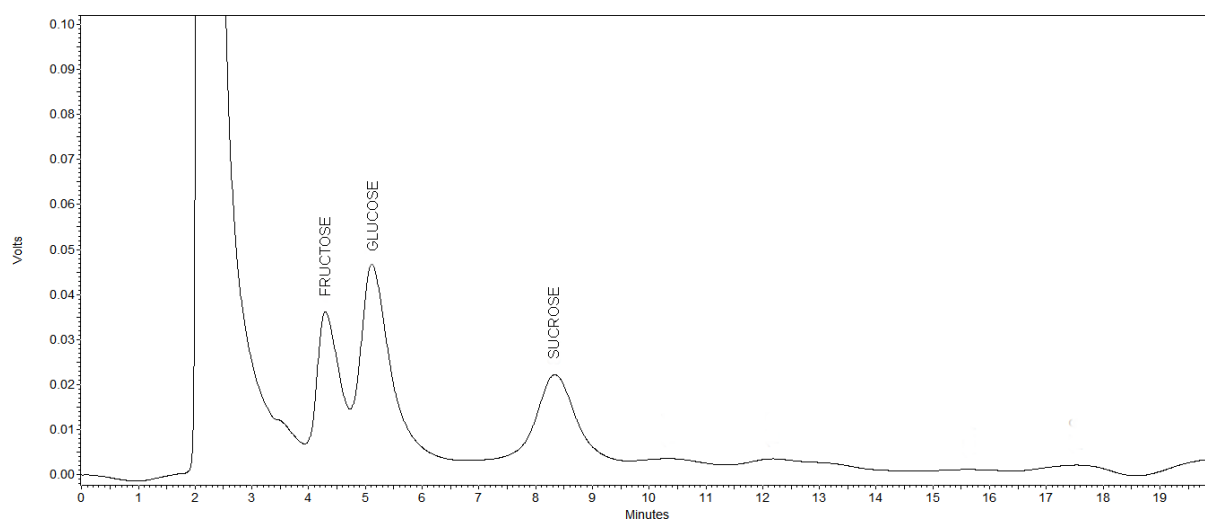


Figure S3. Chromatographic profile of fructose, glucose, and sucrose from *Musa* spp.

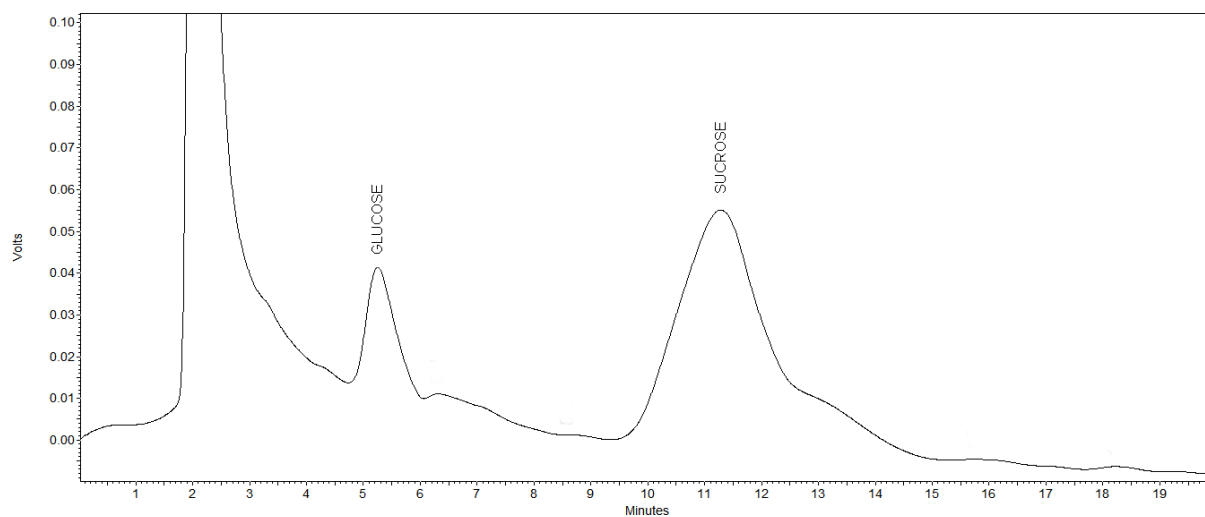


Figure S4. Chromatographic profile of fructose, glucose, and sucrose from commercial gel.

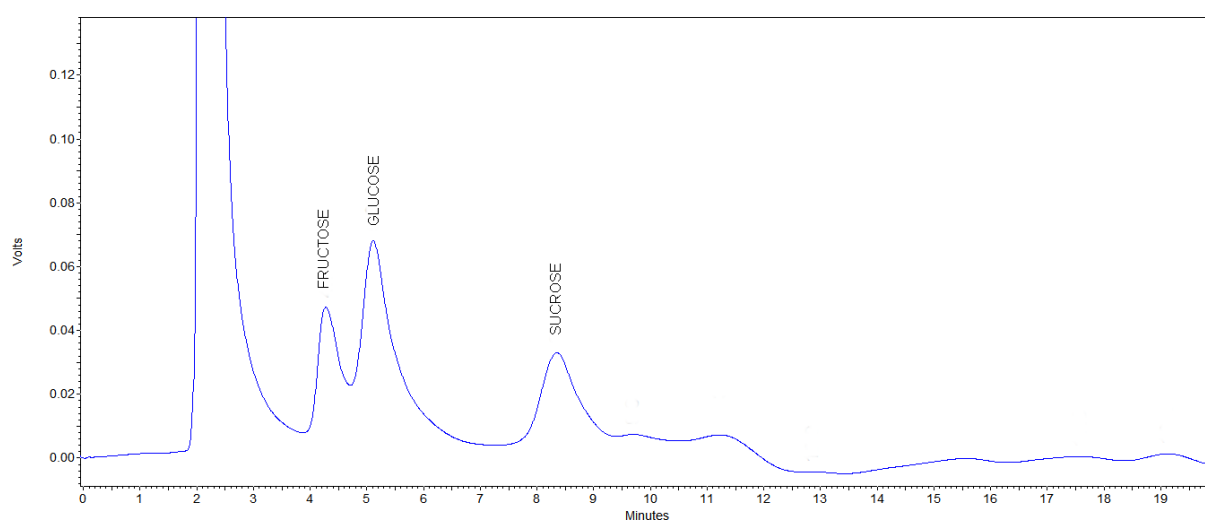


Figure S5. Chromatographic profile of fructose, glucose, and sucrose from the AL1 carbohydrate gel formulation.

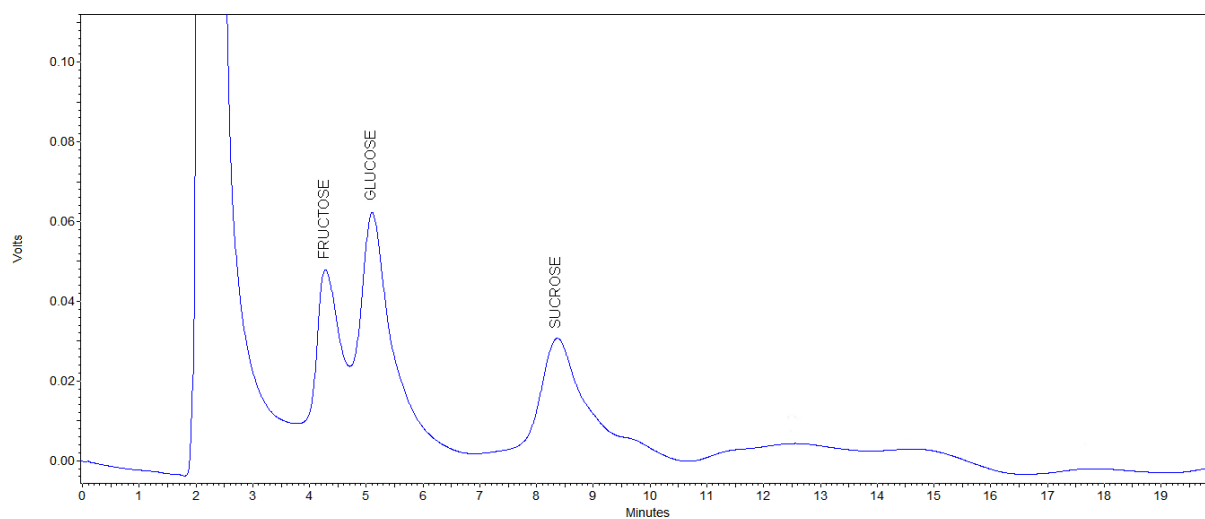


Figure S6. Chromatographic profile of fructose, glucose, and sucrose from the AL2 carbohydrate gel formulation.

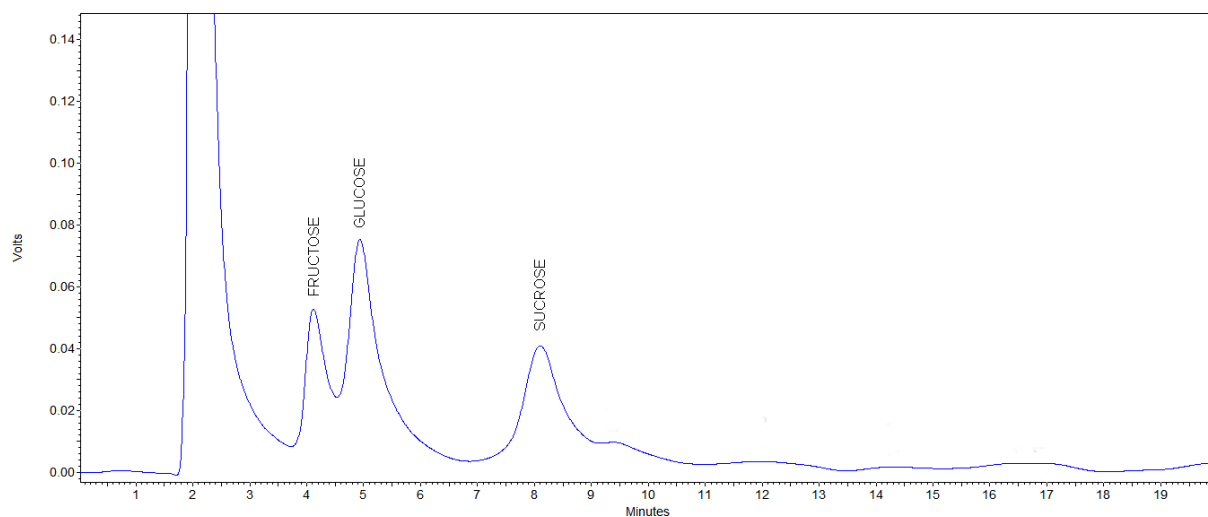


Figure S7. Chromatographic profile of fructose, glucose, and sucrose from the AL3 carbohydrate gel formulation.

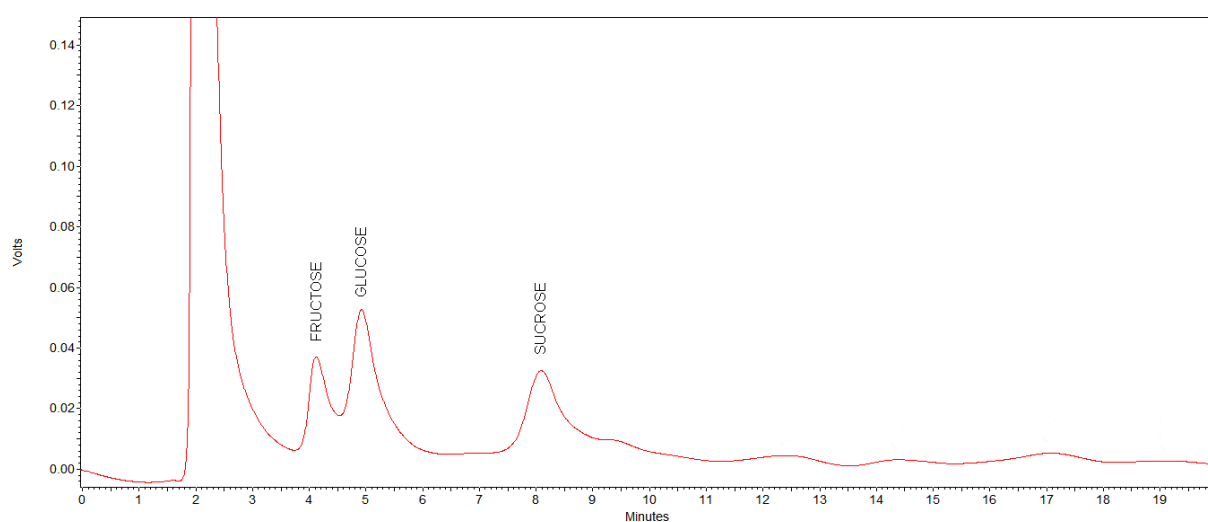


Figure S8. Chromatographic profile of fructose, glucose, and sucrose from the BL1 carbohydrate gel formulation.

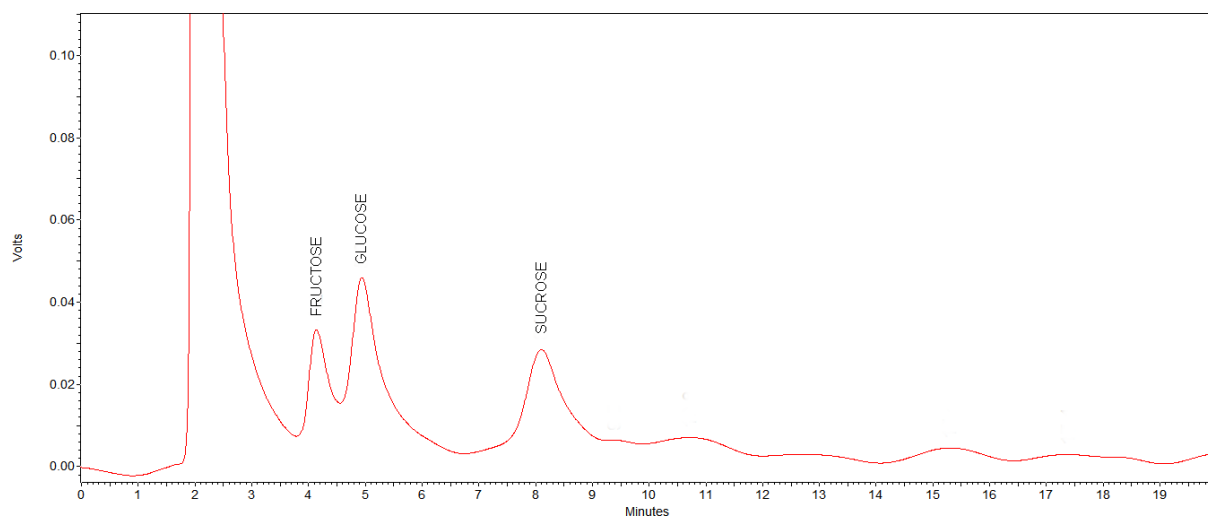


Figure S9. Chromatographic profile of fructose, glucose, and sucrose from the BL2 carbohydrate gel formulation.

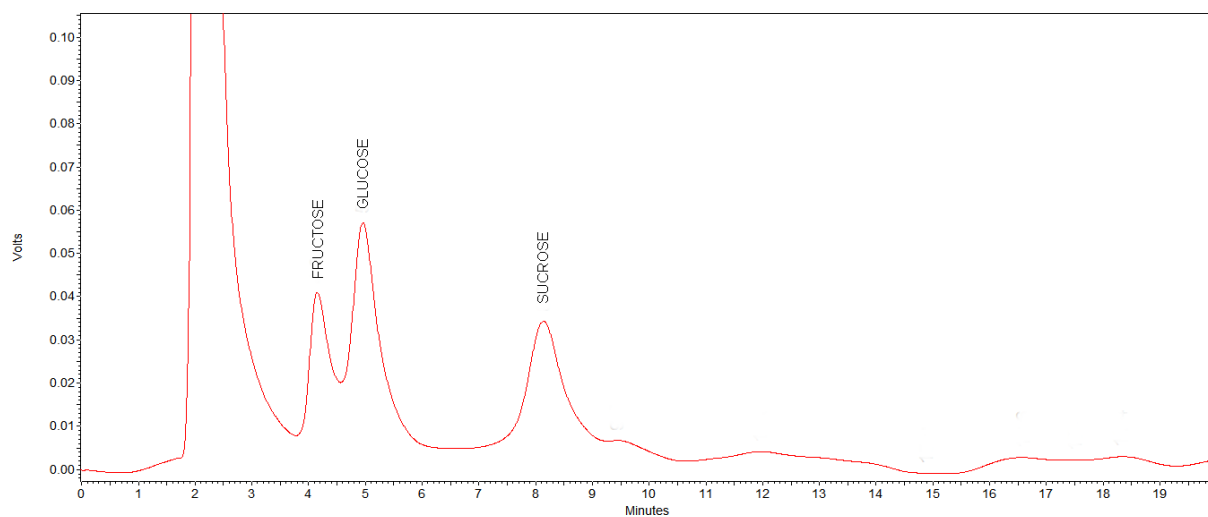


Figure S10. Chromatographic profile of fructose, glucose, and sucrose from the BL3 carbohydrate gel formulation.

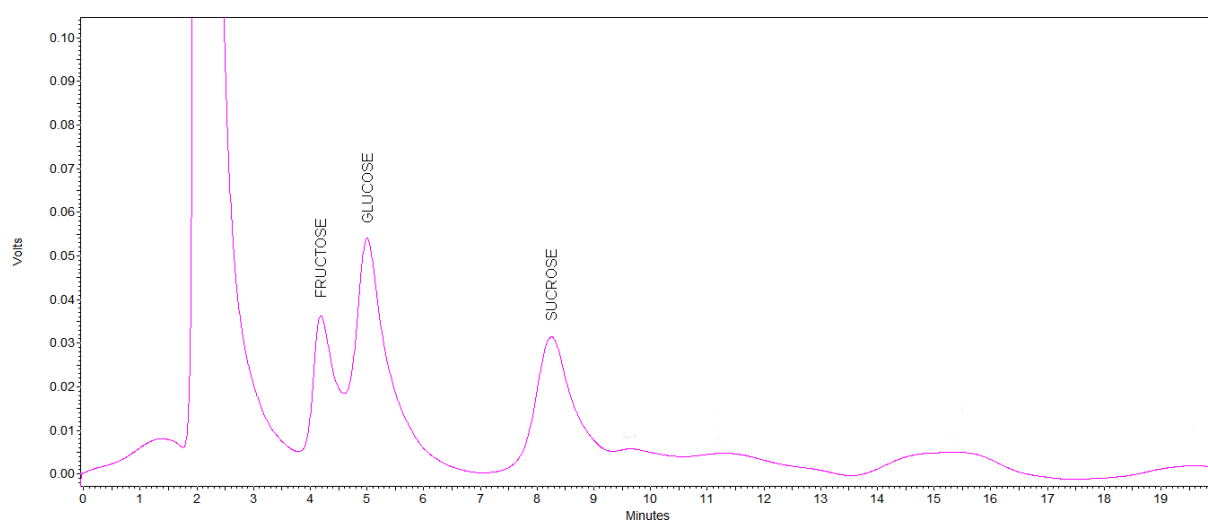


Figure S11. Chromatographic profile of fructose, glucose and sucrose from the CL1 carbohydrate gel formulation.

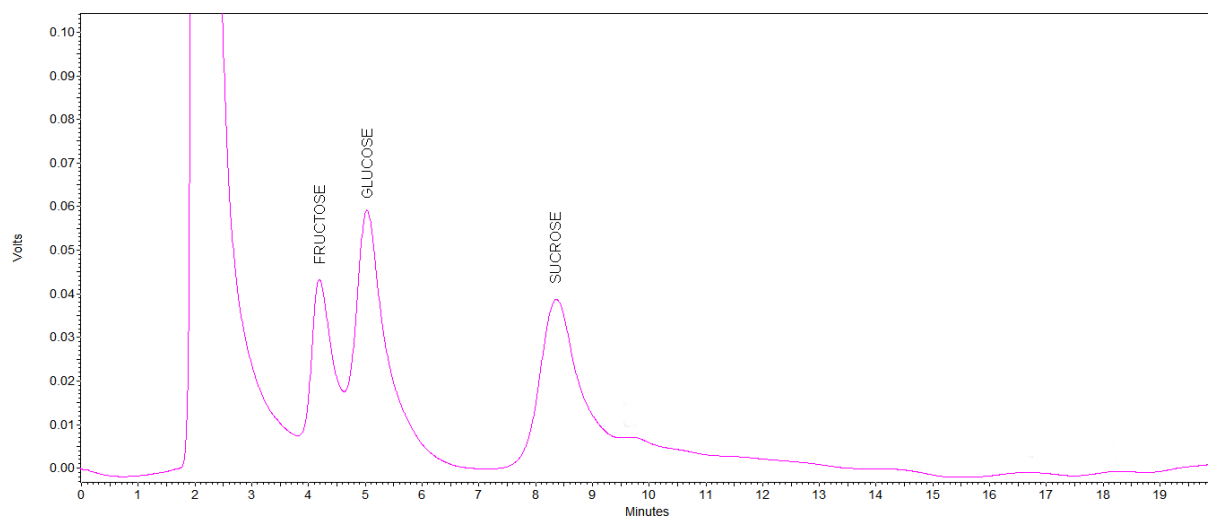


Figure S12. Chromatographic profile of fructose, glucose, and sucrose from the CL2 carbohydrate gel formulation.

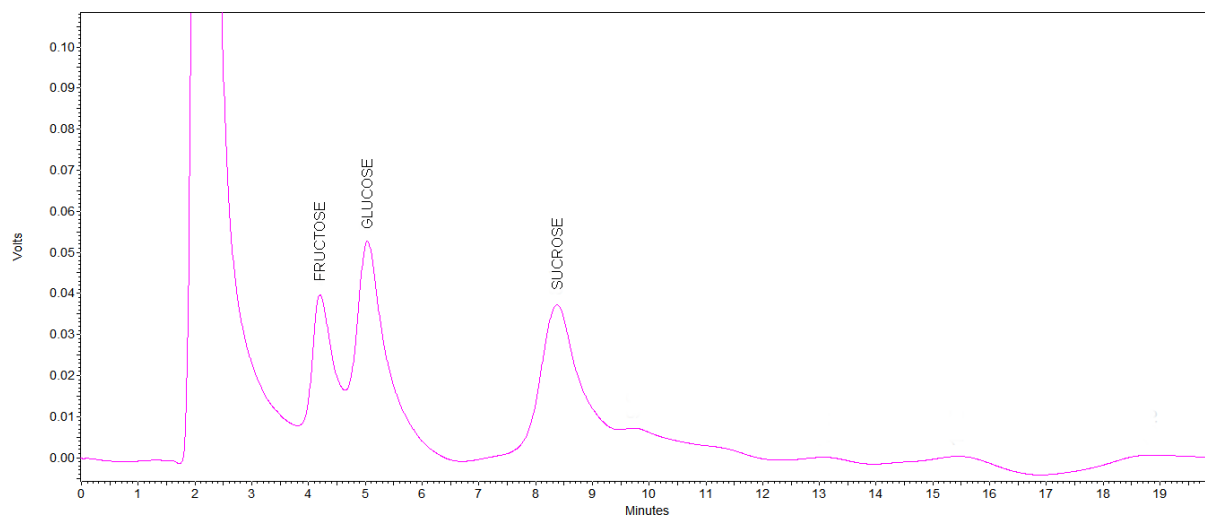


Figure S13. Chromatographic profile of fructose, glucose, and sucrose from the CL3 carbohydrate gel formulation.

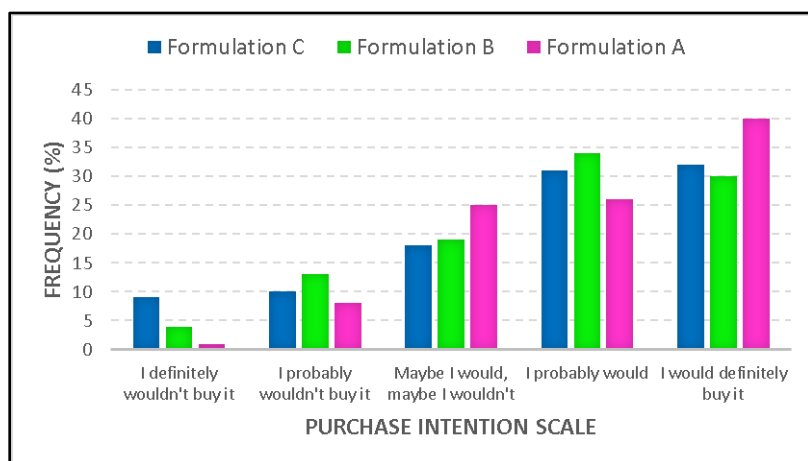


Figure S14. Demonstration of the hedonic scale of purchase intention for formulations A, B, and C of the genipap and banana gel.

Table S1. Bibliographical research with formulations of energy-replenishing gel for endurance athletes.

Author (Year)	Gel ingredients	Moisture (%)	CHO (%)	Energy value (Kcal)	pH	Soluble solids (°Brix)
Suksaard et al. (2022) [10]	Banana, carrageenan, salt, citric acid, maltitol, sucralose	NP	16.0	66.8	NP	NP
Moreira et al.(2018) [37]	Maltodextrin, water, fructose, sodium chloride, magnesium chloride, sodium citrate, citric acid, fumaric acid, pectin 50%, flavorings (banana and açai), potassium citrate, sodium benzoate, potassium sorbate, colorings, and Spirulina biomass 50%.	NP	68.0	273.5	NP	NP
Morgado et al. (2016) [38]	Beet powder, beet juice, carboxymethylcellulose, artificial orange flavoring	76.1	9.1	NP	NP	NP
Ishihara et al. (2020) [39]	Commercial CHO jelly	NP	25.0	100	NP	NP
	Rice, sweet potato, sugar, and water	NP	23.1	100	NP	NP
	Rice with gluten, sugar, and water	NP	22.5	100	NP	NP
Lestari et al. (2021) [40]	Chia seed, maltodextrin, pitaya juice, cucumber juice, xanthan gum	NP	NP	60.2	5.2	10.6
	Chia seed, maltodextrin, pitaya juice, cucumber juice, pectin	NP	NP	58.0	5.5	9.4
	Chia seed, maltodextrin, pitaya juice, cucumber juice, carboxymethylcellulose	NP	NP	41.8	5.9	9.7

NP: Not presented; CHO: Carbohydrate

Table S2. Concentration diagram and analysis of the different formulations of genipap and banana gel.

FORMULATIONS / FRESH MATERIAL	CONCENTRATION (genipap:banana)	ANALYSES PERFORMED
A	10:90	Focus group testing
B	20:80	
C	30:70	
D	40:60	
E	50:50	
F	60:40	
A	50:50	Microbiological analysis and sensory testing
B	70:30	
C	90:10	
Genipap pulp	100:0	Physical chemistry; Proximate composition, Glucose, Fructose, Sucrose; ABTS and Polyphenols
Banana pulp	0:100	
A (triplicate)	50:50	Rheology; Physicochemistry; Proximate composition: Glucose, Fructose, Sucrose; ABTS and Polyphenols
B (triplicate)	70:30	
C (triplicate)	90:10	
Commercial gel	Commercial sachet	

ABTS: 2,2'- azino-bis(3-ethylbenzo-thiazoline-6-sulfonic acid).

Table S3. Physicochemical Analysis and Proximate Composition (wet basis) of the fresh material and carbohydrate gel formulations.

FORMULATION A	pH	Titratable Acidity (TA)	Soluble Solids (SS)	TA/SS Ratio	Moisture	Ash	Protein	Lipid	CHO	Energy Value
					(g/100g sample)					(Kcal)
Batch 1	3.56±0.02a	0.07±0.00a	69.00±0.00a	957.84±6.11a	34.44±0.32a	0.71±0.00a	0.43±0.04a	0.53±0.00a	63.89	262.05
Batch 2	3.54±0.05a	0.07±0.00a	70.00±0.00a	969.00±12.75a	31.67±0.50a	0.75±0.03a	0.36±0.29a	0.56±0.04a	66.45	272.28
Batch 3	3.55±0.00a	0.07±0.00a	70.00±0.00a	971.37±19.67a	33.18±3.42a	0.74±0.02a	0.42±0.12a	0.51±0.09a	64.55	264.47
FORMULATION B	pH	Titratable Acidity (TA)	Soluble Solids (SS)	TA/SS Ratio	Moisture	Ash	Protein	Lipid	CHO	Energy Value
					(g/100g sample)					(Kcal)
Batch 1	3.58±0.00a	0.09±0.00a	69.50±0.70a	804.61±11.76a	38.51±1.48a	0.80±0.05a	0.36±0.17a	0.22±0.03a	60.11	243.86
Batch 2	3.56±0.00a	0.08±0.00a	69.50±0.70a	831.93±11.12a	40.42±2.38a	0.69±0.01a	0.33±0.03a	0.26±0.02a	58.30	236.86
Batch 3	3.56±0.00a	0.09±0.00a	69.50±0.70a	794.14±9.92a	37.43±1.87a	0.77±0.04a	0.36±0.00a	0.25±0.04a	61.00	247.69
FORMULATION C	pH	Titratable Acidity (TA)	Soluble Solids (SS)	TA/SS Ratio	Moisture	Ash	Protein	Lipid	CHO	Energy Value
					(g/100g sample)					(Kcal)
Batch 1	3.50±0.12a	0.10±0.00a	70.50±0.70a	723.19±19.84a	36.29±2.15a	0.97±0.05a	0.31±0.08a	0.42±0.09a	62.01	253.06
Batch 2	3.48±0.05a	0.10±0.00a	69.50±0.70a	690.45±6.65a	38.89±2.18a	1.05±0.04a	0.31±0.01a	0.39±0.05a	59.36	242.19
Batch 3	3.43±0.05a	0.10±0.00a	69.50±0.70a	670.64±3.98a	37.51±3.38a	0.92±0.07a	0.32±0.03a	0.33±0.08a	60.92	247.93

Table S4 Glucose, fructose, and sucrose analysis and antioxidant activity and total polyphenols of the fresh material and the carbohydrate gel formulations.

FORMULATION A	Glucose (mg/g)	Fructose (mg/g)	Sucrose (mg/g)	ABTS (uM trolox/g)	Total Polyphenols (mg gallic acid/100g sample)
Batch 1	152.75±0.79a	59.42±0.58a	100.49±7.74a	6.47±0.72a	113.68±1.75a
Batch 2	149.44±5.00a	58.49±6.05a	98.20±6.92a	5.97±0.49b	102.30±2.31a
Batch 3	157.16±1.14a	62.50±0.27a	103.11±3.79a	6.72±0.81a	99.89±3.92a
FORMULATION B	Glucose (mg/g)	Fructose (mg/g)	Sucrose (mg/g)	ABTS (uM trolox/g)	Total Polyphenols (mg gallic acid/100g sample)
Batch 1	122.78±3.58a	41.60±0.70a	101.97±2.43a	8.63±0.82a	113.45±2.09a
Batch 2	121.51±0.49a	40.60±4.03a	100.14±1.85a	8.35±1.22a	101.57±1.17a
Batch 3	127.49±4.18a	45.02±3.16a	101.56±5.99a	7.48±0.69a	103.01±0.49a
FORMULATION C	Glucose (mg/g)	Fructose (mg/g)	Sucrose (mg/g)	ABTS (uM trolox/g)	Total Polyphenols (mg gallic acid/100g sample)
Batch 1	134.71±13.52a	45.58±1.88a	137.54±0.05a	8.72±0.64a	173.80±2.67a
Batch 2	127.42±2.19a	46.99±1.95a	136.37±10.18a	11.22±1.22a	165.78±5.37a
Batch 3	127.61±2.88a	46.31±1.20a	145.23±2.33a	10.52±1.24a	181.63±9.40a