

**Supplementary table 1.** Composition of model foods. The proteinaceous blend of pea protein isolate and wheat flour was prepared for a ration (75:25, w:w).

Ingredient	Milk (%)	Pudding (%)	Burger (%)	Breadstick (%)
Water	87.5	75	46.5	25.4
Pea protein	7.5	15	26.25	38.8
Wheat flour	2.5	5	8.75	12.9
Oil	1	3	13.5	25.4
Soy lecithin	0.5	-	0.5	-
Vanilla	0.5	0.5	-	-
Acesulfame K	0.5	0.5	-	-
Corn starch	-	0.5	1	-
Carrageenan	-	0.5	-	-
Baking soda	-	-	-	0.8
White vinegar	-	-	-	1.7
Salt	-	-	1	0.8
Black pepper	-	-	0.8	-
Garlic powder	-	-	1	-
Paprika	-	-	0.7	-

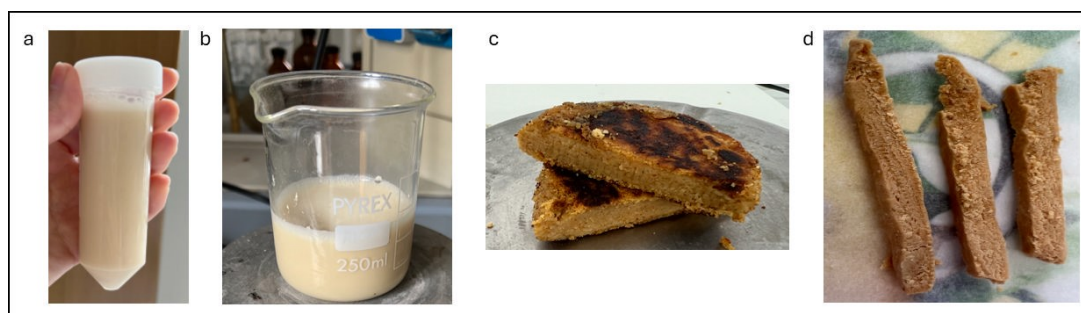
**Supplementary table 2.** Protein-free matrices ingredient list as per label.

Product	Ingredient list
Protein-free milk (FLAVIS)	Water, cream (milk), maltodextrin, lactose (milk), freeze-dried whey, emulsifier: sucrose esters; natural flavoring, calcium carbonate, thickener: carboxymethylcellulose.
Protein-free pudding (made with FLAVIS ingredients)	86.96% of protein-free milk flavis, 10.87% protein cake flour mix flavis (sugar, corn starch, potato starch, leavening agents: gluconodeltalactone, sodium bicarbonate; potato flour, thickener: locust bean flour; emulsifier: mono- and diglycerides of fatty acids), white sugar (2.17%).
Protein-free burger (FLAVIS)	Deglutinated wheat starch, corn starch, dextrose, thickeners: hydroxypropyl methylcellulose, guar seed flour, carob seed flour; vegetable fiber (psyllium), leavening agents: gluconodeltalactone, sodium bicarbonate; vegetable margarine [vegetable fats and oils (palm, palm kernel, rapeseed), water, salt, emulsifier: mono- and diglycerides of fatty acids; natural flavoring], sugar, water, yeast, dried carrots, caramelized sugar, parsley, tomato extract, maltodextrin, salt, apple extract, thyme, flavoring, emulsifier: mono- and diglycerides of fatty acids.
Protein-free breadstick (FLAVIS)	Deglutinated wheat starch, sunflower seed oil, modified corn starch, glucose-fructose syrup, thickeners: hydroxypropyl methylcellulose, locust bean gum; vegetable fiber (psyllium, citrus fruits), potato flour, corn starch, emulsifiers: mono- and diglycerides of fatty acids, citric esters of mono- and diglycerides of fatty acids; modified tapioca starch, yeast, raising agent: ammonium bicarbonate; natural flavoring, salt.

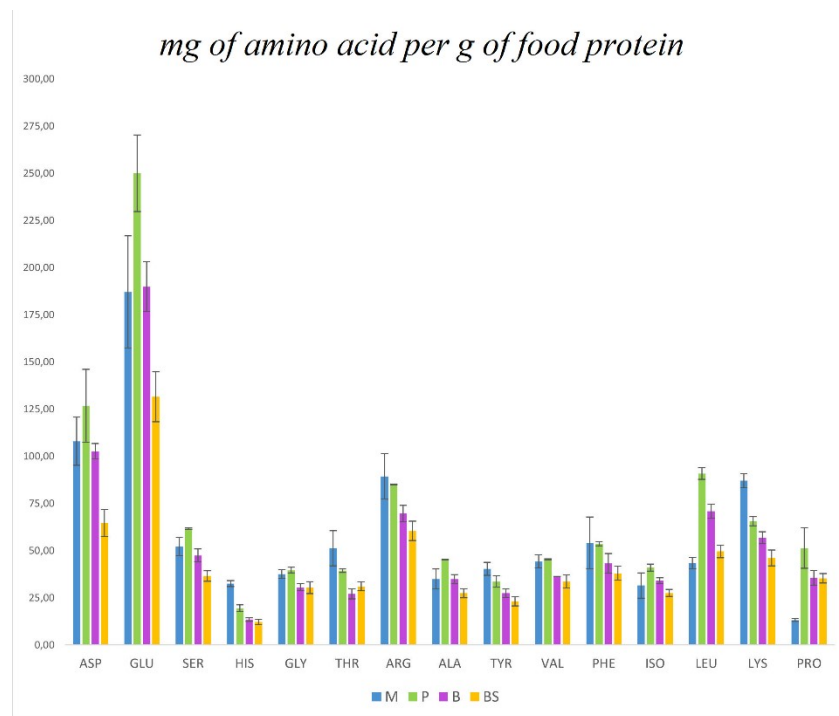
**Supplementary table 3.** Theoretical Nutritional Label Based on Ingredient Composition. This table presents the estimated nutritional values derived from the ingredient composition of the products. The values are calculated based on standard nutritional data for each ingredient and may vary slightly from actual lab-tested results.

	<i>Milk</i>	<i>Pudding</i>	<i>Burger</i>	<i>Breadstick</i>
<i>Serving portion</i>	240 mL	125 mL	188 g	40 g
<i>Energy (kCal)</i>	130	112	518	164
<i>Carbohydrates (g)</i>	5	5	19	4
<i>Proteins (g)</i>	15	13	42	12
<i>Fats (g)</i>	5	4	31	11

**Supplementary figure 1.** Model foods used in the study: panel a) plant-based milk, panel b) plant-based pudding, panel c) plant-based burger, panel d) plant-based breadsticks.



**Supplementary figure 2.** Bar graph representing the proportions of amino acids in selected model foods expressed as mg of amino acid per gram of food protein. The value was normalised by the Kjeldahl protein content of the food determined with the WNP conversion factor of 5.43.



**Supplementary figure 3.** Total digestibility of food matrices expressed as hydrolysis % determined using the total NOPA and as the sum of the HPLC-quantified amino acids.

