Table S1. Summary of safety-related characteristics of the nutritional adjuncts for practical application. Daily doses may vary according to the health indication, clinical context, and the concentration and standardization of the active ingredient. General contraindications also include hypersensitivity/allergy to active substances, liver or kidney disease, and concurrent use of anticoagulants and hepatotoxic medications. Caution is advised during pregnancy, breastfeeding, and in pediatric use due to limited safety data in these populations, requiring individualized assessment. In individuals on glucose-lowering or antihypertensive therapy, nutritional actives with similar actions may produce additive effects, requiring close monitoring to avoid hypoglycemia or hypotension. For extended supplementation use, regular monitoring remains advisable.

Nutritional active	Usual dose	Common adverse events	Contraindications and precautions	Safety evidence
Soluble fiber	For metabolic benefits: 7.6-8.3 g/day [63] For gastrointestinal discomfort: 20-25 g/day [64,65]	GI AEs (delayed gastric emptying, flatulence, diarrhea); impaired mineral absorption; dysbiosis and intestinal inflammation [22,60,66-68]	Avoid high fiber intake during the first days of treatment; increase intake gradually and ensure adequate hydration [8]; combined use with probiotics could inhibit pathogenic gut bacterial growth [7]. Excessive fiber may exacerbate delayed gastric emptying [5].	[69-71]
cRG-I	300 mg/day [72-74]	Well-tolerated, with no significant increase in AEs vs placebo in clinical trials [75,76].	Known carrot allergy.	[76,77]
GOS	Up to 16.2 g/day [78]	Well-tolerated, with typically mild and transient GI AEs.	Autoimmune diseases and immunosuppressive medications.	[78-81]
Probiotics	Strain-specific. Typical medium dose 1–30 × 10^9 CFUs High dose >30 × 10^9 CFUs Look for probiotic strains that include	GI AEs, generally mild and self-limiting.	Severe immunocompromise; critical illness; significant GI barrier disruption.	Numerous strains have long histories of safe use [83,84].

	Lactobacillus or *Bifidobacterium* species [82].			
Whey protein	20-40 g/day [82]	GI AEs; acne; dysbiosis [85].	Cow's milk allergy/sensitivity; lactose intolerance; kidney/liver disease; acne-prone individuals.	[86-88]
Collagen	10-15 g/day	Excellent tolerability, with usually no AEs.	Kidney stone disease and hyperoxaluria; kidney disease [89].	[90,91]
Bovine colostrum	Suggested doses range from 500-1,000 mg/day commercially, though many studies (specially on athletes) use 10-20 g/day [92]	Well-tolerated, with minor GI AEs occurring infrequently.	Cow's milk allergy/sensitivity; conditions sensitive to calcium intake (e.g., hypercalcemia, metastatic calcification, renal disease); WADA advises athletes to avoid BC due to IGF-1 concerns [93].	[94]
Chromium picolinate	Typically 35-120 mcg/day, up to 1,000 mcg/day [95]	No AEs have been linked to high intakes from food or supplements.	People with kidney/liver impairment may be more susceptible to high intake.	[96-98]
L-glutamine	Typically 5-10 g/day	Generally well-tolerated at moderate doses, with mainly mild GI AEs [99,100].	Liver/kidney impairment; Reye's syndrome; bipolar disorder; seizure; restricted protein intake.	[99]
Zinc	Up to 25 mg/day [101]	Excess intake may lead to GI discomfort, headaches, and reduced appetite. Prolonged use of ≥50 mg/day can impair copper absorption, depress immune function, and lower HDL [102].	Taking ≥ 25 mg elemental iron at the same time can reduce zinc absorption and plasma levels; may interact with medications such as quinolone and tetracycline antibiotics, penicillamine, and thiazide diuretics.	[101,103,104]

Omega-3 PUFAs	Typically 250-500 mg/day of EPA+DHA	Generally well tolerated at doses up to 5 g/day of EPA+DHA, with mainly mild GI AEs [105].	Atrial fibrillation/arrhythmias; bleeding disorders or use of anticoagulant/antiplatelet; allergy to fish/seafood.	[105]; Krill [106]
Bitter melon (*Momordica charantia*)	Typically 100-500 mg/day	Well-tolerated, with minor GI AEs.	Pregnancy and lactation; renal/hepatic impairment; should be used cautiously with hypoglycemic drugs.	[107]
Ceylon cinnamon (*Cinnamomum zeylanicum*)	0.5-3 g/day	Well-tolerated, with minor GI AEs.	Liver disease; concomitant anticoagulant therapy.	Typical doses provide coumarin levels far below regulatory concern thresholds [108-111].
Guava leaf (*Psidium guajava*)	Typically 500-1,000 mg/day of standardized extract	Typically mild and self-limiting GI AEs.	Guava products should be used cautiously with metoclopramide or other CYP2D6/P-gp-metabolized drugs [112].	[113-115]
French maritime pine bark (*Pinus pinaster*)	Typically 50-200 mg/day	Well-tolerated, with minor GI AEs.	Autoimmune diseases; bleeding disorders or before surgery; use cautiously in DM due to possible hypoglycemia in high dosages.	[116]
Citrus flavonoids	200 mg/day	Minimal and generally mild GI AEs.	Based on the flavonoid composition, avoid anticoagulant therapy and liver/kidney impairment.	[117-119]
Moro Orange (*Citrus sinensis* L. Osbeck)	Typically 400 mg/day	Well-tolerated, with minimal GI AEs reported.	Citrus fruit allergy; gastric /liver/kidney disease.	[120-122]
Ginger (*Zingiber officinale*)	Typically up to 1,000 mg/day [123]	Well-tolerated, with minor GI AEs.	Gallbladder disease; bleeding disorders or use of anticoagulant/antiplatelet.	[124,125]

Abbreviations: AE, adverse event; BC, bovine colostrum; CYP2D6, cytochrome P450 2D6; DHA, docosahexaenoic acid; DM, diabetes mellitus; EPA, eicosapentaenoic acid; EFSA, European Food Safety Authority; GI, gastrointestinal; HDL, high-density lipoprotein; IGF-1, insulin-like growth factor 1; P-gp, P-glycoprotein; WADA, World Anti-Doping Agency.