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(57) Abstract :

The present invention discloses a single-serve liquid nutraceutical composition in the form of a multivitamin and mineral shot. The composition comprises vitamins B1, B2, B3, B5, B6, B7, C, A, D, and E, zinc, ginseng extract, curcumin, and lecithin, together with natural sweeteners, acidulants, flavors, and colorants. Curcumin is pre-emulsified with lecithin in defined ratios using high-shear homogenization to improve dispersion, stability, and bioavailability. The formulation maintains a pH of 3.2–3.8, shows no precipitation, and retains $\geq 90\%$ of active ingredients under accelerated stability conditions. Comparative studies demonstrate higher plasma vitamin C and zinc levels and quantifiable curcumin bioavailability relative to capsule formulations. The invention provides a convenient, palatable, and effective liquid system that enhances adherence, improves antioxidant capacity, and ensures stable, scalable supplementation of micronutrients and botanicals.

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