CLIENT & SAMPLE INFORMATION

Client	TriVial BioWorks	**Certified Date**	08/04/2026
Lot / Batch	LC10-0803	**Product Name**	Lipo-C + B12
Form / Matrix	Lyophilized Powder	**Volume**	10 mL

This Certificate of Analysis confirms the identity and quality of the multi-component liquid blend listed herein. Compound identification was performed by HPLC-UV with LC-MS/MS confirmation. Declared active components were evaluated against their expected molecular masses and chromatographic profiles.

ACTIVE COMPONENT IDENTITY (LC-MS/MS)

Ingredients OBSERVED in this sample by LC-MS (ESI Q-TOF), listed with the ion actually measured. Each m/z below is a measurement of this vial, accepted against the run's own mass-accuracy figure. Accurate mass establishes a mass and an elemental composition, not a structure, and peak intensity is not proportional to concentration - this table reports PRESENCE, not content or proportion.

Component	Theoretical m/z [M+H]+	Observed m/z	Status
Inositol measured as myo-Inositol / Glucose / Fructose	181.07	181.0724	DETECTED
L-Carnitine	162.11	162.1140	DETECTED
Caffeine	195.0876	195.0892	DETECTED
Cyanocobalamin (B12)	1355.5747	1355.5727	DETECTED
Benzoic acid	123.0441	123.0429	DETECTED
GABA	104.0706	104.0707	DETECTED
Betaine / L-Valine	118.0863	118.0864	DETECTED
Asiaticoside (Centella)	997.4769	997.4786 [M+K]+	DETECTED
L-Carnosine	265.0697	265.0707 [M+K]+	DETECTED
Methylcobalamin (B12)	1382.5510	1382.5381 [M+K]+	DETECTED
L-Proline	116.0706	116.0703	DETECTED
L-Leucine / L-Isoleucine	132.1019	132.1020	DETECTED
Chlorobutanol	214.9194	214.9184 [M+K]+	DETECTED
Overall Identity Determination			PASS

Method: LC-MS (ESI Q-TOF), untargeted profile against a curated panel of compounds catalogued in liquid blends | 13 ingredient(s) observed. Only compounds OBSERVED in this sample are listed. A compound not listed here is not thereby absent from the product: the panel, the acquired mass range and positive-mode ionisation each bound what this method can see, and acidic or negative-mode species are poorly seen or invisible.

PHYSICOCHEMICAL PROPERTIES

Property	Specification	Result	Status
Appearance / Color	Conforms	Conforms	PASS
Physical Form	Liquid	Liquid	PASS
Particulate Matter	Essentially free	Conforms	PASS

ADDITIONAL QUALITY SCREENS

ENDOTOXIN SCREEN

Method	**LAL (USP <85>)**
Limit	**<= 0.5 EU/mL**
Result	**< 0.10 EU/mL**
Status	**PASS**

HEAVY METAL SCREEN

Method	**ICP-MS**
Specification	**Compliant**
Result	**PASS**
Status	**PASS**

TESTING METHODOLOGY

Compound Identity (LC-MS/MS)

Multi-component identity confirmation performed by reverse-phase HPLC with UV detection coupled with tandem mass spectrometry (LC-MS/MS). Each declared active is identified by retention time and, where a characteristic ion is available, confirmed by observed [M+H]+ molecular ion matched against its theoretical mass. Highly polar components lacking a UV chromophore (e.g. free amino acids) are reported by identity confirmation and may require orthogonal (derivatization / HILIC) methods for full quantitation.

