



**Amino Acids: Biofluids, cell cultures, Tissues or Feces**

**Service Code: AAA**

**Summary:** Amino acids are analyzed using the Phenomenex EZfaast kit. Samples are extracted, semi-purified, derivitized and measured by EI-GCMS using norvaline as an internal standard for normalization. See reference for User Guide and analytical details. Analytes are reported as uM with CV's generally 10%, but Histidine is exceptional with a CV ~30%.

Container: Eppendorf Tube or equivalent

**Normal Volume:** Plasma (100 ul) Tissue (50-100 mgs); Cells (2E7); Feces(50 mg).

**Minimal Volume:** Plasma (50 uL) Tissue (30 mg); Cells (~5E6); Feces (20 mg)

**Special Handling:** If human or primate, note any known presence of infectious agents

**Sample Collection:** Please see our detailed sample collection protocol on the Michigan Regional Comprehensive Metabolomics Resource Core (MRC<sup>2</sup>) website before preparing samples for analysis or contact the core director at the number below for details.

**Reference:** <http://www.fortunesci.com/image/download2/USER%20GUIDE/EZfaast%20Guide.pdf>

**Table I: Analytes Reported.** D- and L- enantiomers are not distinguished Arginine, Cysteine, Cystine, and others on request.

Analyte	Abbr.	Molecular Formula	Pubchem	LOQ (uM)
Alanine	A, Ala	C <sub>3</sub> H <sub>7</sub> NO <sub>2</sub>	5950	20
Asparagine	N, Asn	C <sub>6</sub> H <sub>14</sub> N <sub>4</sub> O <sub>2</sub>	236	20
Aspartate	D, Asp	C <sub>4</sub> H <sub>8</sub> N <sub>2</sub> O <sub>3</sub>	424	20
Glutamine	Q, Gln	C <sub>4</sub> H <sub>7</sub> NO <sub>4</sub>	738	20
Glutamate	E, Glu	C <sub>3</sub> H <sub>7</sub> NO <sub>2</sub> S	611	20
Glycine	G, Gly	C <sub>5</sub> H <sub>9</sub> NO <sub>4</sub>	750	20
Histidine	H, His	C <sub>5</sub> H <sub>10</sub> N <sub>2</sub> O <sub>3</sub>	773	20
Isoleucine	I, Ile	C <sub>2</sub> H <sub>5</sub> NO <sub>2</sub>	791	20
Leucine	L, Leu	C <sub>6</sub> H <sub>9</sub> N <sub>3</sub> O <sub>2</sub>	857	20
Lysine	K, Lys	C <sub>6</sub> H <sub>13</sub> NO <sub>2</sub>	866	20
Methionine	M, Met	C <sub>6</sub> H <sub>13</sub> NO <sub>2</sub>	876	20
Phenylalanine	F, Phe	C <sub>6</sub> H <sub>14</sub> N <sub>2</sub> O <sub>2</sub>	994	20
Proline	P, Pro	C <sub>5</sub> H <sub>11</sub> NO <sub>2</sub> S	614	20
Serine	S, Ser	C <sub>9</sub> H <sub>11</sub> NO <sub>2</sub>	617	20
Threonine	T, Thr	C <sub>5</sub> H <sub>9</sub> NO <sub>2</sub>	205	20
Tryptophan	W, Trp	C <sub>3</sub> H <sub>7</sub> NO <sub>3</sub>	1148	20



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Tyrosine	Y, Tyr	$C_4H_9NO_3$	1153	20
Valine	V, Val	$C_11H_{12}N_2O_2$	1182	20
<i>alpha</i> -Aminoisobutyric acid	Aib	$C_4H_9NO_2$	6119	20
4-Hydroxyproline	Hyp	$C_5H_9NO_3$	825	20
Ornithine	Orn	$C_5H_{12}N_2O_2$	389	20