

## ANALYSIS OF BRANCHED CHAIN ALPHA-KETOACIDS

**Description:** We offer diverse methods for the sensitive detection and quantification of branched chain  $\alpha$ -ketoacids. Detection limits depend on matrix type, input quantity and selected assay. Samples are extracted using 1M perchloric acid or 0.1M HCl, semi-purified, further processed and measured by either UPLC-MS or UPLC-FLR.

Analytes are reported as  $\mu\text{M}$  or  $\text{pmol}/\text{mio}$  cells or  $\text{pmol}/\text{mg}$  tissue.

**Container:** Eppendorf Tube or equivalent

**Optimal Volume:** Plasma / cell culture medium (200  $\mu\text{L}$ ); Tissue (30  $\text{mg}$ )<sup>1</sup>; Cells (1.5 mio).

**Minimal Volume:** Plasma / cell culture medium (60  $\mu\text{L}$ ); Tissue (20  $\text{mg}$ )<sup>1</sup>; Cells (0.75 mio).

**Sample Collection:** Please see our detailed sample collection protocols.

**Quantification:** Absolute, using external calibration.

**Please note:** For human material, note any known presence of infectious agents

### List of reported compounds

Compound name	Identifier	Formula	Monoisotopic mass
Glyoxylate	<a href="#">HMDB0000119</a>	$\text{C}_2\text{H}_2\text{O}_3$	74.000
Pyruvate	<a href="#">HMDB0000243</a>	$\text{C}_3\text{H}_4\text{O}_3$	88.016
Ketobutyrate	<a href="#">HMDB0000005</a>	$\text{C}_4\text{H}_6\text{O}_3$	102.032
Oxovalerate	<a href="#">HMDB0001865</a>	$\text{C}_5\text{H}_8\text{O}_3$	116.047
Phenylpyruvate	<a href="#">HMDB0000205</a>	$\text{C}_9\text{H}_8\text{O}_3$	164.047
Ketoglutarate	<a href="#">HMDB0000208</a>	$\text{C}_5\text{H}_6\text{O}_5$	146.022
Ketoisocaproate	<a href="#">HMDB0000695</a>	$\text{C}_6\text{H}_{10}\text{O}_3$	130.063
Ketoisovalerate	<a href="#">HMDB0000019</a>	$\text{C}_5\text{H}_8\text{O}_3$	116.047
Ketoisomethylvalerate	<a href="#">HMDB0253791</a>	$\text{C}_6\text{H}_{10}\text{O}_3$	130.063

<sup>1</sup> Pulverized/crushed (deep-frozen) and exact weight noted

### LC conditions

<b>Column</b>	Waters HSS T3 100 x 2.1mm
<b>Temperature</b>	40° C
<b>Mobile phase A</b>	H2O + 0.1% FA
<b>Mobile phase B</b>	ACN + 0.1% FA
<b>Flow</b>	0.55 ml/min

### Notes

Samples need to be snap-frozen and stored at -80°C.

Variations in sampling procedures will affect metabolite measurements.

<sup>1</sup> Pulverized/crushed (deep-frozen) and exact weight noted