



## Product Information

### L-Leucine

Product Number **L 8000**  
Store at Room Temperature

Replacement for Product Number L 60-2

#### Product Description

Molecular Formula:  $C_6H_{13}NO_2$

Molecular Weight: 131.2

CAS Number: 61-90-5

pI: 6.04<sup>1</sup>

pK<sub>a</sub>: 2.33 (-COOH), 9.74 (-NH<sub>2</sub>)<sup>1</sup>

Specific Rotation: +15.1° (0.026 M, 6 N HCl, 25 °C)<sup>2</sup>

Synonyms: 2-amino-4-methylvaleric acid,  
 $\alpha$ -aminoisocaproic acid, Leu<sup>2</sup>

The alkyl amino acid L-leucine is one of the two purely ketogenic amino acids, or amino acids that are degraded to give ketone bodies. The metabolism of leucine is initiated in muscle, and it is metabolized to isovaleryl CoA via the formation of  $\alpha$ -ketoisocaproate. While leucine does not act as a carbon source for the net synthesis of glucose, it does provide a source of nitrogen for transport to the liver and kidney.<sup>3,4</sup> A review of the extended leucine biosynthetic pathway in *Saccharomyces cerevisiae* has been published.<sup>5</sup> The role of the various amino acids in nonproteinogenic pathways has been reviewed.<sup>6</sup>

The use of leucine in a 96-well plate spectrophotometric assay for the activity of branched-chain amino acid aminotransferases has been described.<sup>7</sup> Leucine has been used as a molecular marker in the recovery of DNA from palaeontological samples for PCR analysis.<sup>8</sup> L-Leucine is used in cell culture media and is a component of MEM amino acids solution (Product No. M 5550).

Leucine has been utilized as a starting material in the synthesis of the (-)-fumiquinazolines A, B, and I.<sup>9</sup> The surface tension of L-leucine in various aqueous solutions has been studied.<sup>10</sup>

#### Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

#### Preparation Instructions

This product is soluble in 1 M HCl (100 mg/ml). Its solubility in water has been reported to be 24.3 mg/ml.<sup>1,2</sup>

#### References

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6. Meijer, A. J., Amino acids as regulators and components of nonproteinogenic pathways. *J. Nutr.*, **133(6 Suppl 1)**, 2057S-2062S (2003).
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8. Bachmann, L., et al., Voltage-induced release of nucleic acids from palaeontological samples. *Electrophoresis*, **21(8)**, 1488-1492 (2000).
9. Snider, B. B., and Zeng, H., Total synthesis of (-)-fumiquinazolines A, B, C, E, H, and I. Approaches to the synthesis of fiscalin A. *J. Org. Chem.*, **68(2)**, 545-563 (2003).
10. Gliniski, J., et al., Surface properties of aqueous solutions of L-leucine. *Biophys. Chem.*, **84(2)**, 99-103 (2000).

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