



Figure S1. The assessment of the leucine contaminants in isoleucine samples by NMR spectroscopy.

The signal of hydrogen atom attached to the leucine alpha carbon is well separated from the corresponding signal in isoleucine and is not hidden beneath the spinning sidebands of the isoleucine signal.

A, ^1H NMR spectrum of L-leucine. The quartet signal centered at 3.735 ppm from the hydrogen atom attached to the alpha carbon is shown enlarged.

B, ^1H NMR spectrum of the commercial batch of isoleucine exhibiting a clear quartet signal of leucine hydrogen atom attached to the alpha carbon. This signal is enlarged in the rectangle in the *inset* spectrum. The content of leucine is less than 1 %.

C, ^1H NMR spectrum of purified L-isoleucine exhibiting no leucine signal. The small doublets around the main peak are spinning sidebands.