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[54] **METHOD OF DETERMINING SOURCES OF ACETYL-COA UNDER NONSTEADY-STATE CONDITIONS**

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[52] U.S. Cl. **435/35; 435/4; 435/14; 435/29; 435/30; 436/56; 436/57; 436/63; 436/173; 424/9.3; 424/9.35**

[58] Field of Search **435/4, 35, 14, 30, 29; 424/1.1, 9; 436/173, 56, 57, 63**

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[57] **ABSTRACT**

The present invention relates to a method of measuring the contribution of one or more exogenously administered ¹³C-labeled substrates to acetyl-CoA. The measurement can be made in a tissue or cell using ¹³C NMR without the constraint of metabolic or isotopic steady-state. Furthermore, the method permits the determination even when spectral lines are broad due to B₀ inhomogeneity, thereby opening the way for substrate utilization studies in vivo. The method does not require many of the simplifying assumptions involved in ¹¹C or ¹⁴C methods, and, since a stable isotope, ¹³C, is used a wide variety of compounds with complex labeling patterns may be synthesized and studied.

30 Claims, 7 Drawing Sheets