

RESEARCH PAPERS

极大螺旋微藻(分节螺旋属)在一六面体光合生物反应器中生物合成<sup>13</sup>C标识氨基酸和糖

夏金兰, 聂珍媛, J. M. Levert

<sup>a</sup> Institute of Bioengineering, Central South University, Changsha 410083, China

<sup>b</sup> Service de Chimie et Biochimie Appliquées, Faculté Polytechnique de Mons, Mons 7000, Belgique

收稿日期 修回日期 网络版发布日期 接受日期

**摘要** This paper presents the investigation on biosynthesis of high-value-added amino acids and sugars labeled uniformly with stable isotope <sup>13</sup>C by microalga *Spirulina (Arthrospira) maxima* in a parallelepiped photobioreactor. The kinetic data of both batch and continuous cultures with characterization of the amino acids and sugars are shown. The continuous culture without nutrients deficiency is for biosynthesis of amino acids, with tyrosine as one of the principal constituents, and the batch culture with deficiency in nitrogen is for biosynthesis of labeled glucose that is up to 64% versus dry mass of cells.

**关键词** [amino acid](#) [microalga](#) [parallelepiped photobioreactor](#) [Spirulina \(Arthrospira\) maxima](#) [<sup>13</sup>C-labeled](#) [sugar](#)

分类号

**DOI:**

**Biosynthesis of <sup>13</sup>C-Labeled Amino Acids and Sugars by *Spirulina (Arthrospira) Maxima* in a Parallelepiped Photobioreactor**

XIA Jinlan, NIE Zhenyuan, J. M. Levert

<sup>a</sup> Institute of Bioengineering, Central South University, Changsha 410083, China

<sup>b</sup> Service de Chimie et Biochimie Appliquées, Faculté Polytechnique de Mons, Mons 7000, Belgique

Received Revised Online Accepted

**Abstract** This paper presents the investigation on biosynthesis of high-value-added amino acids and sugars labeled uniformly with stable isotope <sup>13</sup>C by microalga *Spirulina (Arthrospira) maxima* in a parallelepiped photobioreactor. The kinetic data of both batch and continuous cultures with characterization of the amino acids and sugars are shown. The continuous culture without nutrients deficiency is for biosynthesis of amino acids, with tyrosine as one of the principal constituents, and the batch culture with deficiency in nitrogen is for biosynthesis of labeled glucose that is up to 64% versus dry mass of cells.

**Key words** [amino acid](#); [microalga](#); [parallelepiped photobioreactor](#); [Spirulina \(Arthrospira\) maxima](#); [<sup>13</sup>C-labeled](#); [sugar](#)

通讯作者:

夏金兰

作者个人主页: 夏金兰; 聂珍媛; J. M. Levert

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF \(1499KB\)](#)

▶ [\[HTML全文\] \(0KB\)](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [引用本文](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中包含“amino acid”的相关文章](#)

▶ [本文作者相关文章](#)

· [夏金兰](#)

· [聂珍媛](#)

· [J M Leert](#)