



首页 期刊介绍 编委会 编辑部 投稿须知 期刊订阅

动物营养学报 » 2013, Vol. 25 » Issue (2) :263-267 DOI: 10.3969/j.issn.1006-267x.2013.02.005

综述 Review

[最新目录](#) | [下期目录](#) | [过刊浏览](#) | [高级检索](#)

<  
>

## 水生龟鳖类糖代谢的研究进展

刘海燕, 杨振才

河北师范大学生命科学学院,石家庄 050024

### Research Advances in Carbohydrate Metabolism in Aquatic Turtles

LIU Haiyan, YANG Zhencai

College of Life Science, Hebei Normal University, Shijiazhuang 050024, China

- 摘要
- 参考文献
- 相关文章

Download: PDF (1342KB) [HTML](#) (1KB) Export: BibTeX or EndNote (RIS) Supporting Info

摘要 水生龟鳖类是一种以摄食动物性蛋白质饲料为主的爬行动物,对糖的利用能力不高。本文综述了水生龟鳖类对糖的利用能力、糖需求量、糖代谢模式及调控机制的研究现状,并结合哺乳动物和鱼类的糖代谢机制比较其中的联系与区别,提出水生龟鳖类糖代谢研究中存在的问题及今后的研究方向。

关键词: [水生龟鳖类](#) 糖需求量 糖代谢模式 调控机制

**Abstract:** Aquatic turtles are a kind of reptile mainly ingesting the animal protein feed, and they have a low ability to utilize carbohydrate. This review summarizes the recent advances about utilization ability of carbohydrate, carbohydrate requirement, carbohydrate metabolism model and regulation mechanism for aquatic turtles, and compares the relation and difference of mammals and fish with turtles in the carbohydrate metabolism mechanism in order to put forward questions and directions of the carbohydrate metabolism study in aquatic turtles.

**Keywords:** [aquatic turtles](#), [carbohydrate requirement](#), [carbohydrate metabolism model](#), [regulation mechanism](#)

收稿日期: 2012-09-29;

基金资助:

国家自然科学基金(31272315)

通讯作者 杨振才,博士生导师,教授,E-mail:zcyang@hebtu.edu.cn

引用本文:

刘海燕, 杨振才 . 水生龟鳖类糖代谢的研究进展[J]. 动物营养学报, 2013,V25(2): 263-267

LIU Haiyan, YANG Zhencai . Research Advances in Carbohydrate Metabolism in Aquatic Turtles[J]. Chinese Journal of Animal Nutrition, 2013, 25(2): 263-267.

链接本文:

[http://118.145.16.228/Jweb\\_dwy/CN/10.3969/j.issn.1006-267x.2013.02.005](http://118.145.16.228/Jweb_dwy/CN/10.3969/j.issn.1006-267x.2013.02.005) 或 [http://118.145.16.228/Jweb\\_dwy/CN/10.3969/j.issn.1006-267x.2013.02.005](http://118.145.16.228/Jweb_dwy/CN/10.3969/j.issn.1006-267x.2013.02.005)

- [1] NUANGSAENG B, BOONYARATAPALIN M. Protein requirement of juvenile soft-shelled turtle *Trionyx sinensis*. *Journal of Animal Research*, 2001, 32: 106-111.
- [2] 杜杰,孙建义,卢亚萍.乌龟的营养价值及营养需要[J].中国饲料,2006,15:32-34.
- [3] 华颖,邵庆均.中华鳖营养与饲料研究进展[J].饲料工业,2011,32(16):18-22.
- [4] 孙鹤田,轩子群,王志忠,等.中华鳖对蛋白质、脂肪、糖、混合无机盐及氨基酸适宜需要量的研究 //中国水产学会水产养殖专业委员会.中国水产学会水产养殖专业委员会,1997: 241-249.

- [5] 包吉墅,刘春,高晓莉,等.稚鳖的营养素需要量及饲料最适能量蛋白比[J].水产学报,1992,16(4):365-371.
- [6] 涂涝,黄勇军.甲鱼配合饲料中蛋白质、脂肪以及醣类适宜含量初探[J].水产科技情报,1995,22(1):17-20.
- [7] 卞伟,王冬武.淡水龟类的养殖[M].北京:农村读物出版社,1999.
- [8] 周嗣泉,宋理平,陈有光,等.鳖用饲料中碳水化合物节约蛋白质的效果[J].中国饲料,2000(23):22-23.
- [9] 彭福峰.乌龟配合饲料的配制技术[J].渔业致富指南,1999(20):27-28.
- [10] 潘凤莲,吴凡,周贵谭,等.配合饲料中 $\alpha$ -淀粉与生淀粉比例对乌龟生长的影响[J].水利渔业,2007,27(1):99-100.
- [11] 龙良启,白东清,梁拥军,等.幼鳖胃肠胰组织中主要消化酶活性分布[J].动物学杂志,1997,32(6):23-26.
- [12] 沈美芳,陈焕铨.甲鱼对配合饲料中蛋白质、脂肪、碳水化合物的消化率[J].水产养殖,1995(5):22-23.
- [13] 肖明松,王志耕,孙玉军,等.饲料中添加果寡糖和糖萜素对中华鳖消化酶活力的影响[J].中国畜牧兽医,2004,31(2):10-
- [14] 管越强,周环,张磊,等.枯草芽孢杆菌对中华鳖生长性能、消化酶活性和血液生化指标的影响[J].动物营养学报,2010,2
- [15] 王珺.蛋白质含量对中华鳖稚鳖能量收支和氮收支的影响 .硕士学位论文.石家庄:河北师范大学,2005: 28- 36.
- [16] ENES P,PANSERAT S,KAUSHIK S.Nutritional regulation of hepatic glucose metabolism in fish[J].Fish PI 539.
- [17] FU S J,XIE X J.Nutritional homeostasis in carnivorous southern catfish (*Silurus meridionalis* Chen): is expenditure during carbohydrate overfeeding?[J]Comparative Biochemistry and Physiology Part A: Molar Physiology,2004,139A: 359- 363.
- [18] PARTATA W A,MARQUES M.Effects of fasting and seasonal variations in brain glycogen disposition in [J].Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology,1994,107(4):
- [19] PENNEY D,PAPADEMAS K.Effect of starvation on fructose diphosphatase,glucose-6-phosphatase and *Pseudemys scripta Elegans*[J].Comparative Biochemistry and Physiology Part B: Biochemistry and M
- [20] POLAKOF S,MOMMSEN T P,SOENGAS J L.Glucosensing and glucose homeostasis: from fish to mammal Physiology Part B: Biochemistry and Molecular Biology,2011,160: 123- 149.
- [21] COSTANZO J P,LEE R E,ULTSCH G R.Physiological ecology of overwintering in hatchling turtles[J].Journal A: Ecological Genetics and Physiology,2008,309A: 297- 379.
- [22] 付世建,罗毅平,谢小军.南方鲇摄食碳水化合物后的血糖动力学方程[J].西南师范大学学报,2006,31(4): 133- 137.
- [23] 蔡春芳,陈立侨.鱼类对糖的代谢[J].水生生物学报,2008,32(4): 592- 597.
- [24] PENHOS J C,RAMEY E.Studies on the endocrine pancreas of amphibians and reptiles[J].American Zoo
- [25] MARQUES M.Effects of prolonged glucagon administration to turtles (*Chrysemys dorsalis*) [J].General and Comparative Endocrinology,2003,138(1): 102- 109.
- [26] MACHADO V L A,MARQUES M.Effects of insulin on the glucose-uptake by the thyroid-gland of the turtle at different temperatures[J].Journal of Experimental Zoology,1993,266: 284- 289.
- [27] RHOTEN W B.Sensitivity of saurian pancreatic islets to glucose[J].American Journal of Physiology,1977,233(5): E555-E561.
- [28] SEKI Y,SATO K,KONO T,et al.Broiler chickens (Ross strain) lack insulin-responsive glucose transporter 1[J].Comparative Endocrinology,2003,133: 80- 87.
- [29] SUN Y,OUYANG Y B,XU L,et al.The carboxyl-terminal domain of inducible Hsp70 protects from ischemia/reperfusion injury in the rat brain[J].Journal of Cerebral Blood Flow and Metabolism,2006,26(7): 937- 950.
- [30] MCCUE M D.Starvation physiology: reviewing the different strategies animals use to survive a common stress[J].Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology,2010,156: 1- 18.
- [31] BROSNAN J T,WATFORD M.Starvation: metabolic changes .Encyclopedia of Life Science,2004 .http://www.elsci.com/ebooks/a0000642.html.
- [32] DA SILVA R S M,MIGLIORTNI R H.Effects of starvation and refeeding on energy-linked metabolic processes in the liver[J].Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology,1990,96: 415- 422.

没有找到本文相关文献