

Contents

Part I Anatomical Characteristics of the Gastrointestinal Tract and Digestive Glands of Pigs During Development

- 1 Development of the Gastrointestinal Tract in Pigs 3**
Kang Yao, Zhihong Sun, Zikui Liu, Zhefeng Li, and Yulong Yin
- 2 Development of Digestive Glands in Pigs 19**
Zhiru Tang, Zheng Ruan, and Yulong Yin
- 3 Development and Renewal of Intestinal Villi in Pigs 29**
Huansheng Yang, Xia Xiong, and Yulong Yin

Part II Terminal Digestion, Amino Acid Absorption/Metabolism, and Microbiota in the Pig Intestine During Development

- 4 Terminal Digestion of Polypeptides and Amino Acid Absorption by the Pig Intestine Epithelial Cells During Development 51**
François Blachier, Yulong Yin, Guoyao Wu, and Mireille Andriamihaja
- 5 Developmental Amino Acid Metabolism in the Pig Small and Large Intestine Epithelial Cells 59**
François Blachier, Guoyao Wu, Yulong Yin, Yongqing Hou, and Mireille Andriamihaja
- 6 Development of Micro-ecological System in Small and Large Intestine of Piglets 75**
Shengping Wang, Gang Liu, Lichuang Cai, Jiannan Ding, and Yulong Yin

Part III Physiological Functions of Amino Acids in Pigs

7 Structure, Metabolism and Functions of Amino Acids: An Overview	91
Wenkai Ren, Yinghui Li, Yulong Yin, and François Blachier	
8 Synthesis and Degradation of Proteins in Pigs	109
Fugui Yin, Yulong Yin, and Yongqing Hou	
9 Factors That Affect Amino Acid Metabolism in Pigs	123
Qinghua He, Yulong Yin, Yongqing Hou, Guixin Qin, Hui Sun, Jianhong Liu, Bo Liu, and Zongkun Zheng	
10 Amino Acids and Hormone Secretion in Pigs	141
Bie Tan, Yulong Yin, Yizhen Wang, De Wu, Yingcai Lin, Xue mei Ding, Yuyun Mu, and Jirong Lv	
11 Amino Acids, Gene Expression, and Cell Signaling in the Pig Intestine	151
Qiwen Fan, Xianghua Yan, Yulong Yin, and Zhen Liu	
12 Amino Acids and Immune Functions	175
Bie Tan, Mingyong Xie, and Yulong Yin	
13 The Pig Model for Studying Amino Acid-Related Human Diseases: Amino Acids and Intestinal Diseases in Preterm Infants	187
Caihong Hu, Yulong Yin, Anshan Shan, Xingguo He, Weifen Li, and Jun Fang	
14 Amino Acids and Obesity, Diabetes, and Dyslipidemia in Pigs and Other Mammals	203
Wu Xin, Li Fengna, and Yulong Yin	

Part IV Methodology for Research on Amino Acid

15 Methods of Amino Acid Analysis	217
Xia Xiong, Yulong Yin, Yiqiang Huang, Yongfei Wang, Qingqi Wen, Yuyun Mu, Xugang Shu, Zhichun Zhan, Ying Zhou, and Guixiong Qiu	
16 Surgical Techniques Used in Amino Acid Nutrition Research	231
Yonggang Zhang, Yulong Yin, Bo Deng, Ruilin Huang, Tiejun Li, Xugang Shu, Guixiong Qiu, and Martin Nyachoti	

17	Determination of Protein Digestibility in the Growing Pig	251
	Paul J. Moughan and Warren Miner-Williams	
18	Measurement of Synthesis and Degradation of Proteins	273
	Dingfu Xiao, Fugui Yin, Yulong Yin, Yangxiao Jiang, Jun Fang, Tiejun Li, Ruilin Huang, and Martin Nyachoti	
19	Methods for Measuring Amino Acids of Endogenous Origin in Intestines	289
	Yulong Yin, Zhang Yuzhe, Feng Zemeng, Ziwei Xu, Jie Feng, Bo Deng, Zhou Chuanshe, and Ruilin Huang	
	Index	301

Nutritional and Physiological Functions of Amino Acids
in Pigs

Blachier, F.; Wu, G.; Yin, Y. (Eds.)

2013, IX, 307 p., Hardcover

ISBN: 978-3-7091-1327-1