

CONTENTS

	Preface	3
Chapter I	Peculiarities of exchange of cAMP, cGMP and prostaglandin in the isolated esthelics of the small intestine of large cattle in dependence on age and in enteropathology (Tomchuk V., Illek J.)	5
1.1	Biochemical and physiological basis of the processes of absorption and secretion in the small intestine	7
1.1.1	Structural organization of the mucosa of the small intestine	7
1.1.2	Functional-morphological characteristics of the epithelial cells of the small intestine	9
1.1.3	Characteristics of the absorption and secretion processes in the small intestine in normal and pathological conditions	12
1.1.4	Intracellular systems for the regulation of absorption and secretion in the small intestine	14
1.1.4.1	The role of cAMP and cGMP in the regulation of absorption and secretion in the small intestine	14
1.1.4.2	The role of prostaglandins in the regulation of absorption and secretion in the small intestine	16
1.1.5	Biochemical basis for the development of acute digestive disorders in the small intestine	17
1.2	Obtaining isolated cells of small intestine epithelium of cattle	23
1.2.1	Preparation of intestinal epithelial cells by various methodological approaches	23
1.2.2	Evaluation of the metabolic activity of the epithelium obtained by various methodological approaches	27
1.2.3	Scheme of obtaining cells of the small intestine epithelium of cattle	28
1.2.4.	Characteristics of energy metabolism in the epithelium of the small intestine of adult cattle, healthy and sick enteropathology of newborn calves	29
1.3	Characteristics of intracellular regulatory systems in the epithelium of the small intestine of adult cattle, healthy and sick with enteropathology of newborn calves	32
1.3.1	Cyclic nucleotide exchange state	32
1.3.2	The activity of adenylate cyclase, guacylate cyclase and phosphodiesterase	35

1.3.3	The intracellular content of the prostaglandins F1 α and E2	37
	Conclusion to chapter I	40
	List of symbols and abbreviations	44
	Bibliography	45
Chapter	Lipid composition and structural changes in the plasmolem of	
II	circumferential enterocytes after spontaneous and experimental	
	enteropathology of animals (Gryshchenko V.)	55
2.1.	Lipid composition and structural characteristics of the epithelium of the	
	small intestine mucosa in diseased calves with enteropathology	58
2.1.1	Changes in the lipid composition of cellular structures in pathological	
	conditions	60
2.1.2	Structural characteristics of membranes of circumferential enterocytes	
	in case of enteropathology of calves and their correction	67
2.1.3	Lipid composition of the epithelium of the small intestinal mucosa in	
	the course enteropathology of calves and its correction	75
2.2	Lipid composition and structural characteristics of the small intestinal	
	mucosa epithelium after experimental enteropathology	80
2.2.1	Biological mechanisms of the regulation of the functioning of the	
	organs of the digestive system in experimental enteropathology	80
2.2.2	Structural characteristics of membranes of circumferential enterocytes	
	and hepatocytes in experimental enteropathology and their correction ...	96
2.2.3	Lipid composition of membranes of circumferential enterocytes of the	
	small intestine with experimental enteropathology and its correction	102
2.2.4	Pro- and antioxidant processes in the body under experimental	
	enteropathology, their correction	107
	Conclusion to chapter II	111
	List of symbols and abbreviations	119
	Bibliography	121
Chapter	Lipid composition of plasma membranes of enterocytes of the small	
III	intestine of a leaved ground squirrel in a state of active vital activity	
	and gibernation (Tsvilikhovskiy V.)	137
3.1	Obtaining fluffy enterocytes from the small intestine of a speckled	
	ground squirrel and isolating apical and basolateral membranes from	
	them	139
3.2	Phospholipid composition of apical and basolateral membranes of	
	enterocytes of the small intestine of the speckled ground squirrel at	

	various states of vital activity	144
3.3	The content of cholesterol in the apical and basolateral membranes of enterocytes of the small intestine of the speckled ground squirrel at various states of vital activity	148
3.4	The lipid/protein ratio in the apical and basolateral membranes of the small intestine enterocytes of the speckled ground squirrel at various states of vital activity	151
3.5	Fatty acid composition of lipids of apical and basolateral membranes of enterocytes of the small intestine of the speckled ground squirrel at various states of vital activity	153
	List of symbols and abbreviations	160
	Bibliography	161