## List of Figures

NAME OF FIGURES	PAGE NO.
Hypoxia & pathophysiology	4
Distribution of different bacterial population along with the GI tract	6
and its population density bacteria at various points in the adult	
human intestine.	
Role of probiotics against systemic diseases.	20
Schematic presentation of experimental procedure.	26
DNA fragmentation assay	56
Alteration of some indicator bacterial populations in the feacal	57
sample of rat after 28 days of hypobaric hypoxia at different altitude	
exposure.	
Gas formation ability by the composite bacterial populations in rat	62
small intestine (A) and large intestine (B) of control and different	
HA groups on 7th, 14th, 21th and 28th days	
In albino rat model, the level of IgG and IgA in small intestinal (A)	63
and large intestinal (B) luminal content of Control (C; 14.7 psia) and	
HA (11.8 psia; 9.3 psia; 7.3 psia) groups at different days (7, 14 21	
and 28th day) of hypobaric hypoxic stress	
Representation of light microscopy of kidney tissue section	65
Hematoxylin-eosin stain X 100. A: Histology of kidney tissue in	
group C (Control), B: Histology of kidney tissue in group HA-I	
(6000 feet/1829 m), C: Histology of kidney tissue in group HA-II	
	Hypoxia & pathophysiologyDistribution of different bacterial population along with the GI tractand its population density bacteria at various points in the adulthuman intestine.Role of probiotics against systemic diseases.Schematic presentation of experimental procedure.DNA fragmentation assayAlteration of some indicator bacterial populations in the feacalsample of rat after 28 days of hypobaric hypoxia at different altitudeexposure.Gas formation ability by the composite bacterial populations in ratsmall intestine (A) and large intestine (B) of control and differentHA groups on 7 <sup>th</sup> , 14 <sup>th</sup> , 21 <sup>th</sup> and 28 <sup>th</sup> daysIn albino rat model, the level of IgG and IgA in small intestinal (A)and large intestinal (B) luminal content of Control (C; 14.7 psia) andHA (11.8 psia; 9.3 psia; 7.3 psia) groups at different days (7, 14 21and 28th day) of hypobaric hypoxic stressRepresentation of light microscopy of kidney tissue sectionHematoxylin-eosin stain X 100. A: Histology of kidney tissue in group HA-I

(12000 feet/3657 m), D: Histology of kidney tissue in group HA-III (18000 feet/5486 m).

- **3.3.1** Elevation/diminition in body growth (g%). (A: HA-I, Moderate 67 altitude exposure; B: HA-II, High altitude exposure; C: HA-III, Extreme high altitude exposure.
- **3.3.2** The activity of MDA of the plasma, kidney, liver, large intestine and 79 small intestine epithelia of the C and the different HA group at 7th days of hypobaric hypoxic stress
- **3.3.3** The activity of AST and ALT of the plasma, kidney and liver of the 83 C and the different HA group at 7<sup>th</sup> days of hypobaric hypoxic stress
- **3.4.1** Effect of therapeutic efficacy of commercialprobioticon urinary 84 KIM- 1 level.
- 3.5.1 Representation of light microscopy of kidney tissue section 91 Hematoxylin-eosin stain X 100. A: Histology of kidney tissue in group C (Control), B: Histology of kidney tissue in group HA-II (12000 feet/3657 m), C: Histology of kidney tissue in group HA-III (18000 feet/5486 m), D: Histology of kidney tissue in group HA-III (18000 feet/5486 m), D: Histology of kidney tissue in group HA-III+CP1,E: Histology of kidney tissue in group HA-III+CP2, F: Histology of kidney tissue in group HA-III+CP3, G: Histology of kidney tissue in group HA-III+CP4.
- 3.5.2 Representation of light microscopy of liver tissue section 94
  Hematoxylin-eosin stain X 100. A: Histology of liver tissue in group
  C (Control), B: Histology of liver tissue in group HA-II (12000
  feet/3657 m), C: Histology of liver tissue in group HA-III (18000

Page | V

feet/5486 m), D: Histology of liver tissue in group HA-III+CP1, E: Histology of liver tissue in group HA-III+CP2, F: Histology of liver tissue in group HA-III+CP3, G: Histology of liver tissue in group HA-III+CP4.

3.5.3 Larger villus projection of small intestine with clear structure as well 95 as complete and orderly villi in group C (A) and group HA-II (B), smooth villus projection but with distorted mucosa along disordered villi in HA-III group of small intestine (C). Probiotic (VSL#3) treated group showed smooth villus projection (D) with clear and complete structure as well as orderly villi.

- 3.6.1 Gas formation ability by the composite bacterial populations in rat 96
   small intestine of control and after different probiotic
   supplementation during seven days of experiment.
- 3.6.2 Gas formation ability by the composite bacterial populations in rat 106 large intestine of control and after different probiotic suplimentation during seven days of experiment.
- 3.6.3 Changes in the enzyme profiles (luminal enzymes activities) after 7 107days of experiment before and after probiotics supplementation.
- 3.6.4 In albino rat model, the level of IgG and IgA in luminal content of 109
  Control (C; 14.7 psia) and HA (11.8 psia; 9.3 psia; 7.3 psia) groups
  after 7th days of hypobaric hypoxic stress. A. Small intestine; B.
  Large intestine.