

ASC 406/606

Lecture [11]

Carbohydrates

**Digestion & Absorption
of Carbohydrates**

Non-ruminants:

Starch is the only polysaccharide which is highly utilized by monogastric animals

Digestion:

- Starch & disaccharides (e.g., sucrose & lactose) are digested into :
- The molecules suitable for passage through the intestinal mucosa
- Digestion of starch & absorption of sugars occur in the
- Starch digestion is accomplished by

**Digestion & Absorption
of Carbohydrates**

Non-ruminants:

- α -amylase is secreted by
- α -amylase secreted in pig & chick saliva has
- For amylose: splits the α -1,4 linkages & produces glucose
- For amylopectin: splits the α -1,6 linkages & produces glucose

Digestion & Absorption of Carbohydrates

Non-ruminants:

Other enzymes

- Sucrose \rightleftharpoons glucose + fructose
- Lactose \rightleftharpoons glucose + galactose

The major product of CHO digestion in non-ruminants is _____ (from starch which is the main constituent of swine & poultry diets)

Digestion & Absorption of Carbohydrates

Non-ruminants:

Absorption:

- The mechanism for intestinal absorption of sugars involves _____
- The rate of absorption of sugars decreases in the following order:
_____ > _____ > _____
- The absorbed sugars are carried by the portal blood to the liver

Digestion & Absorption of Carbohydrates

Non-ruminants:

Metabolism:

- CHO are very important for several functions:
 - 1) Essential source of _____
 - 2) Starting material for biosynthesis of _____
 - 3) Starting material for biosynthesis of _____
