## CARBOHYDRATE DIGESTION AND ABSORPTION Lumen Tight junction Blood Dietary carbohydrates Starch Tight junction Sucrose Lactose Brush border-membrane Salivary secretion Basolateral membrane Pancreatic secretion K01229 Small intestinal epithelial cell Na Ó Glucose (Small intestine) Galactose Νá Glucose / Galactose Maltose α-Limit dextrin Endoplasmic reticulum Galactose / Maltotriose Glucose 0 C.Q3. Gluc-6-P Gluc Gluc-6-P PIP3 K01203 Gluc 'Fructose **\*** Fructose **+**0 Glucose Glucose Nonabsorbed carbohydrates -O.Ca<sup>2+</sup> Trans-ಂ **O** lation DNA Xylans / O Pectins Cellulose Starch ୕ୄୢଡ଼୕ gums, Nucleus Frucțans Cytoskeletal rearrangement Butanoate metabolism Glucose / Fructose Glucose Fermentation by colonic bacteria Propanoate metabolism Taste transduction K04625 (Proximal colon) ► PLCβ2 Pyruvate metabolism **►**O DAG Artificial sweeteners Tight junction Ò Butyrate Propionate Acetate CO<sub>2</sub> Short-chain fatty acids (SCFA) 0 Absorption by colonic epithelial cells 04973 12*171*15 (c) Kanehisa Laboratories