VITAMIN DIGESTION AND ABSORPTION Lumen Tight junction Water-soluble vitamins Brush bordermembrane Tight junction Biotin Folate Thiamin biosynthesis metabolism metabolism Cbl (Vitamin B 12) 0 ි**ල**52 ေကြး Basolateral membrane Polypteroyl-glutamate Biocytin TPP Vitamin B6 Small intestinal epithelial cell metabolism FMN<sub>O</sub> 0 degradation တြး တူ Ascorbic acid (Vitamin C) FAD PLP PMP ැල ത Ó ૻ૽ૢ **~** Cbl Cbl CoA NAD Cbl PL PM (Vitamin B 6) Endosome Cbl Thiamin Lysosome K14619 K14619 ୍**ଠ**Cbl (Vitamin B 1) Thiamin Endocytosis Lysosome K14592 Secretory vesicle Riboflavin Riboflavin Thiamin Riboflavin metabolism (Vitamin B2) Riboflavin Biotin Biotin, On Pantothenic acid Biotin ? Pantothenic acid •4 Pantothenic acid Pantothenate and CoA biosynthesis Na O Ascorbic acid 🔿 Folic NAm Ascorbic acid acid O Nicotinate and (Niacin) nicotinamide metabolism Folic 👁 PCFT **ිල** Folic acid Folic acid O Fat digestion Blood Fat-soluble vitamins Saturable energy-dependent process ER / Golgi and absorption (exocytosis) 0 Phylloquinone Mixed micelle Cholecalciferol Chylomicron RE Menaquinone K14462 (Vitamin D) K14462 K14462 Menadione Passive diffusion **O**22 °**⊙**2<sub>TA<u>G</u></sub> **O**2 β-carotene TAG (Vitamin K) MAG TAG K08760 0 TOH 👌 Vit°**⊘**° K14073 vit °O° V it (Vitamin E) CE CE Passive diffusion K08757 K08757 K08757 .▼ KE LPA β-carotene Chylomicron K00678 CLO Passive diffusion ROH Retinol metabolism (Vitamin A) in animals Tight junction Bile secretion Lymph transferred to b lood stream 04977 7/30/15 (c) Kanehisa Laboratories