

Obesity-induces Organ and Tissue Specific Tight Junction Restructuring and Barrier Deregulation by Claudin Switching

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Supplementary Figures Legends:

Supplementary Figure 1: Leptin or DCA-treatment suppresses claudin-2 expression in MDCK-II cells. Polarized monolayer of renal tubular epithelial cells, MDCK-II cells, was subjected to DCA (20 μ m) or Leptin (250 ng/ml)-treatment (in complete culture medium) for twenty-four hours. **a.** Effect of DCA-treatment upon claudin expression using immunoblot analysis; **b.** Quantitative analysis of the antigen specific band intensity from immunoblot analysis; **c.** Effect of Leptin-treatment upon claudin expression using immunoblot analysis; **d.** Quantitative analysis of the antigen specific band intensity from immunoblot analysis; Values are presented as mean \pm SEM. ***P \leq 0.001, **P \leq 0.01 and *P \leq 0.05 compared to control.

Supplementary Figure 2: DCA and Leptin treatment induces time dependent phosphorylation of NF-kB and JUN MAP Kinase in intestinal epithelium cells: Caco-2 cells was subjected time dependently to DCA and Leptin. Immunoblot analysis NF-kB, JUN MAP Kinase and ERK1/2 MAP Kinase during time dependent exposure of DCA and leptin.

Supplementary Figure-3: a. PPI sub-network induced by proteins interacting with claudin-2 and proteins annotated with tight junction, Sodium/Calcium Ion Transport and Colorectal cancer related functions. Majority of proteins interacting with claudin-2 are annotated with tight junction function (A \cap B). While these proteins are also found to be associate with colorectal cancer (A \cap E), calcium ion transport (A \cap D), non-was associated with sodium transport function (A \cap C). Other overlapping functional relationships between two or more groups are also show. ; **b.** PPI sub-network induced by proteins interacting with claudin-7 and proteins annotated with Tight Junction, Sodium/Calcium Ion Transport

and Colorectal cancer related functions. Majority of proteins interacting with claudin-7 are annotated with tight junction function ($A \cap B$). While these proteins are also found to be associated with colorectal cancer ($A \cap E$), calcium ion transport ($A \cap E$), non-was associated with sodium transport function ($A \cap D$). Other overlapping functional relationships between two or more groups are also show.





