



**Figure S1.** Simulated (lines) and observed (open circles) time profiles of metformin urinary excretion after a single oral administration of 1500 mg metformin using various  $\beta_{\text{kidney}}$  values. (A)  $\beta_{\text{kidney}}=0.1$ , (B)  $\beta_{\text{kidney}}=0.3$ , (C)  $\beta_{\text{kidney}}=0.5$ , (D)  $\beta_{\text{kidney}}=0.8$ .