Protocol for estimation of renal threshold for glucose excretion (RTG) from an oral glucose tolerance test (OGTT)

1. Discuss the procedure with the subject and obtain informed consent.
2. The subject is instructed to fast for 8 hours before the test.
3. The subject empties their bladder before the test.
4. At the beginning of the test, the subject drinks a glucose solution containing 75g glucose in 5 minutes.
5. Plasma glucose is sampled before (0min) and 30min, 60min, 90min, 120min，180min, and 240min after glucose ingestion.※
6. Each time the subject urinates during the 4-hour test, urine volume is documented and urinary glucose concentration is measured. At the end of the test (t=240min), the subject empties their bladder to collect the last urine sample. Calculate the amount of urinary glucose excretion during the test (UGE_{240min}).
7. Calculate the renal threshold for glucose excretion (RTG) from plasma glucose levels and UGE_{240min} using https://rtg.renaltubule.com.

※ If you would like to sample plasma glucose at timepoints other than those specified above, please hit the 'Use Other Timepoints' button at the bottom right corner of the page. However, please note that this method has only been verified against the stepwise hyperglycemic clamp procedure using the recommended timepoints, and that using other timepoints might lead to inaccuracy in curve fitting and RTG estimation.

Data collection sheet for determination of

renal threshold for glucose excretion (RTG)

Patient Name：　　Patient ID：　　Age:

Gender：　　Height(m)：　　Weight(kg)：

Plasma glucose levels over time							
Time(min)	0	30	60	90	120	180	240
Plasma glucose (mmol/L)							
Urinary glucose excretion							
Number of urination	1	2	3	4	5		
Urine volume (ml)							
Urinary glucose (mmol/L)							
Urinary glucose excretion over the four hours (UGE_{240min})= mmol							
Serum creatinine= μmol/L				eGFR= ml/min/1.73m^2			