

Q. 1: Can the concentration of D-gluconic acid in soy sauce be determined using the Megazyme D-Gluconic Acid / D-Glucono- $\delta$ -lactone Assay Kit (K-GATE)?

A: Yes. This kit can be used to rapidly and simply quantify D-gluconic acid in soy sauce, with only the following slight modification to the analysis procedure as described in the booklet:

**(a) Sample preparation:**

Take 2 mL of soy sauce, add 4 mL of Carrez I solution (see page 7 of booklet) and mix. Then add 4 mL of Carrez II solution (see page 7 of booklet) and mix thoroughly. Filter the resultant suspension through Whatman No. 1 filter paper without any further additions (in this case, sodium hydroxide is NOT added to neutralize the extract). The filtrate should be clear and may be slightly yellow / orange in colour (this is normal).

**(b) Assay procedure:**

Use up to 0.5 mL of the filtrate according to the normal assay procedure (see page 5 of booklet) – **however**, after the addition of 0.02 mL of suspension 3 (6-PGDH), the cuvettes (after mixing) should be incubated for 10 min (e.g. on the bench top or in the spectrophotometer compartment) prior to recording the  $A_1$  values. This is to allow colour complexes time to stabilise, thus enabling the rise in absorbance due to the conversion of D-gluconic acid to be measured accurately. The speed of the reaction on addition of the gluconate kinase is unaffected by the sample preparation / sample size, and will take just a few min to complete as normal.