Influence of guanidine isothiocyanate on A260/280 and A260/230

For RNA column kits:

- When the total amount of extracted RNA exceeds 10μg, the OD260/230 is generally between 1.3~2.2
- When the total amount of extracted RNA is between 5-10μg, A260/230 will be between 0.7~2.0
- When the total amount of extracted RNA is less than 3μg, A260/230 will be lower than 0.6, and some may even be as low as 0.05

- This is because some buffers (such as Buffer RLC and Buffer RW1) contain guanidine isothiocyanate and the glass filter membrane has water absorption or background adsorption. Guanidine thiocyanate has a strong absorbance at 230nm. Therefore A260/230 is mainly influenced by this guanidine salt rather than originating from the sample.

- Our researches have shown that low concentrations of guanidine isothiocyanate do not affect applications such as reverse transcription, quantitative RT-PCR, and second-generation sequencing. When 260/230 occurs between 0.2~1.0, it can be ignored and directly used for downstream applications such as reverse transcription.

- On the premise of not blocking the column, increasing the amount of sample and lysis buffer appropriately to enhance the nucleic acid concentration (total nucleic acid content>10μg) can significantly improve OD260/230.