

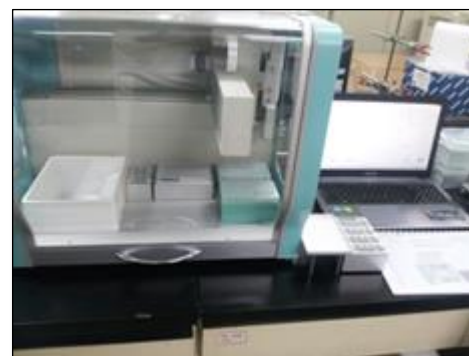
Sample Normalizations Performed by EzMate™ 401 Automated Pipetting System

-- Application Note from the National Instrumentation Center for Environmental Management, Korea

Introduction

The National Instrumentation Center for Environmental Management (NICEM) was established at the College of Agriculture and Life Sciences, Seoul National University on November 25, 1992 equipped with the centralized research facilities for agricultural and sciences and biotechnology.

NICEM aims at upgrading the research capacity of agricultural and veterinary colleges in Korea. By placing emphasis on both environmental and biotechnological aspects in agricultural research and education, NICEM ultimately aims to greatly contribute to augmenting the superb human resource in agricultural sciences and technologies, and to establish sustainable agriculture in Korea.



EzMate™ 401 at NICEM

In NICEM, a great number of RNA and genomic DNA samples need to be normalized before PCR preparation. EzMate™ 401 Automated Pipetting System is an ideal tool to replace manual pipetting in this tedious and human error-prone experiment.

Materials

Reagents and Consumables

- RNA samples in 96-well PCR plate (concentrations are shown in table below)
- Empty 96-well PCR plate
- Distilled water (DW) in 8 ml bottle

	RNA sample conc. (ng/μl)											
	1	2	3	4	5	6	7	8	9	10	11	12
A	139.7	73.8	54.8	85.5	111.5	132.7	71.4	68.7	112.5	58.8	45.7	35.8
B	211.3	72.5	118.8	50.3	71.9	60.0	80.7	65.7	54.3	52.5	50.3	79.6
C	114.2	76.7	65.5	88.6	64.5	48.5	39.2	53.8	63.1	73.9	69.6	143.6
D	74.7	85.4	108.0	91.8	79.3	118.2	58.1	132.1	29.5	62.4	55.5	73.0
E	51.9	97.5	104.2	57.8	101.2	38.8	82.8	125.2	76.6	56.9	54.9	80.5
F	66.0	64.0	79.0	83.8	35.5	108.0	89.8	160.0	111.7	67.1	91.2	73.0
G	32.3	83.9	101.4	63.6	63.9	58.4	70.4	114.3	67.4	57.7	91.5	76.2
H	77.5	169.1	105.5	67.2	74.5	49.6	73.1	59.9	64.6	104.8	138.5	145.4

The concentrations of RNA samples before normalization.

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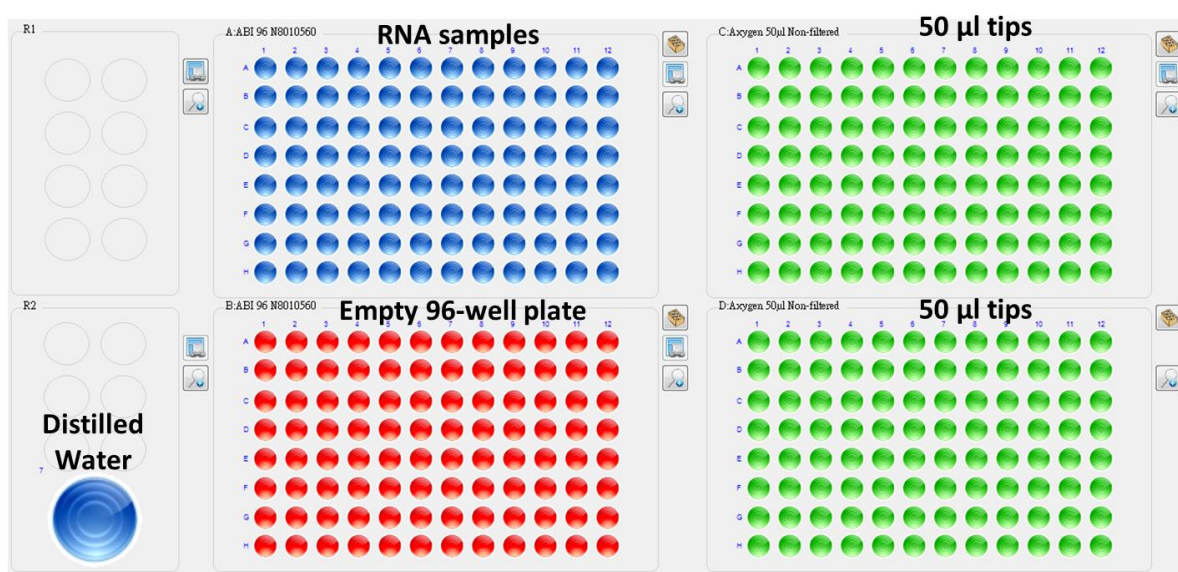
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Equipments

- Arise EzMate™ 401 Automated Pipetting System
- Arise CoolBlock™ 96 adapter for 96-well PCR plate

Methods

1. RNA samples with various concentrations are adjusted to a final concentration of 30 ng/μl in a final volume of 20 μl using the Sample Normalization App of the EzMate™ 401.
2. DW in 8 ml bottle is placed in area R2.
3. RNA samples in 96-well PCR plate is placed in area A.
4. Empty 96-well PCR plate is placed in area B.
5. Tips are placed in area C and D.
6. Sample Normalization™ experiment is performed by the EzMate™ 401.



Worktable for Sample Normalization

Result and Conclusion

Sample Normalization is a very complex and tedious process in which a lot of human errors are easily introduced by manual pipetting. EzMate™ 401 Automated Pipetting System dramatically reduces the hands-on time and provides an easier way to get precise data of sample normalization for PCR experiments.