

Testing the Effects of Transfection on Mammalian Cytokine RNA Expression

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Abstract—This experiment aims to study the effect of genetic expression on polyplex treated cells against β - actin and $INF\alpha$.

I. INTRODUCTION

The mRNA sample
Test the effects on
Each student was given a sample as follows
Poly24 Av Poly24 Ts Just Cells No Wash

II. METHODS

A. Purification

mRNA

B. Reverse Transcription

The mRNA must be converted into cDNA.

C. Q_t PCR

TABLE I
cDNA CONCENTRATIONS

INFA	(Ts, AV, Mi)	1.32
INFA	(Ni)	11.79
β -Actin	(Ts, AV, Mi)	2.00
β -Actin	(Ni)	2.9

The concentrations of cDNA for Ts, Av and Mi were all around 100ng/ μ L. Therefore one set of calculations can be used for all three experiments. The concentrations of Ni, however, were reported to be 11.2ng/ μ L and thus, had to have a different set of calculations.

D. Analysis

Used $\Delta\Delta Ct$ method was used in calculating fold inductions.

III. RESULTS

A. Qubit

B. Q -PCR

IV. DISCUSSION

For a future experiment, it would be suggested that the polyplex cells are treated in 3 hour increments from 3 hours to 24 hours.

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TABLE II
QUBIT RESULTS

SD1	54.27
SD2	1057.52
Tk	8.75
DA	68.0
AV	487.0
Tk	28.0

TABLE III
QUBIT RESULTS

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Tk	28.0

V. CONCLUSION

The mRNA was purified and converted to cDNA. The resulting concentration was relatively high compared to peers. This eludes that the treatment for these cells of polycationic DNA for 24 hours could result in higher transcription rates.

VI. FIGURES

TABLE IV
SIMULATION PARAMETERS

Wells	1	2	3	4	5	6
A	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L
B	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L
C	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L
D	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L
E	Ts	Ni	AV	Ts	Ni	AV
E	Ts	Ni	AV	Ts	Ni	AV
G	Mi -RT	Mi NTC		Mi -RT	Mi NTC	
H						

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TABLE V
SIMULATION PARAMETERS

Wells	7	8	9	10	11	12
A	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L
B	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L
C	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L
D	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L	4ng/ μ L
E	Ts	Ni	AV	Ts	Ni	AV
E	Ts	Ni	AV	Ts	Ni	AV
G	Mi -RT	Mi NTC		Mi -RT	Mi NTC	
H						

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