

## 2.3.-2.6.

2.3 Enter Fluorescence and MST settings for this experiment.

JOVEStillFratti - MO.Control v1.6.1 \*

Session Overview

Expert Mode

Plan Your Experiment

Capillary Selection

From Capillary 1 To Capillary 16

Open drawer

Experiment Settings

Excitation Power 60 %

MST-Power Medium

Before MST 3 seconds

MST-On Time 20 seconds

After MST 1 seconds

Capillary	Target name	Target concentration [nM]	Ligand name	Ligand concentration [nM]	Run	Buffer	Comment
1		20		5000			
2		20		5000			
3		20		5000			
4		20		5000			
5		20		5000			
6		20		5000			
7		20		5000			
8		20		5000			
9		20		5000			
10		20		5000			
11		20		5000			
12		20		5000			
13		20		5000			
14		20		5000			
15		20		5000			
16		20		5000			

Add Dilution Series

Start measurement

The **excitation power** setting should be chosen in such a way that the fluorescence intensity of the target molecule is within the required range:

Detector Type	Signal Intensity Range (fluorescence counts)
LabelFree	3000 - 20,000
Nano	200 - 2000
Pico - RED	3000 - 20,000

2.4 Set MST Before to 3 s, MST on 30 s, and Fluorescence recovery (Fluo.) after 1 s (Before measures initial fluorescence and does not require long times, MST is the actual amount of time for equilibrium to be reached after heat induction).

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Session Overview

Expert Mode

Plan Your Experiment

Capillary Selection

From Capillary 1 To Capillary 16

Open drawer

Experiment Settings

Excitation Power 60 %

MST-Power Medium

Before MST 3 seconds

MST-On Time 30 seconds

After MST 1 seconds

Capillary	Target name	Target concentration [nM]	Ligand name	Ligand concentration [nM]	Run	Buffer	Comment
1		20		5000			
2		20		5000			
3		20		5000			
4		20		5000			
5		20		5000			
6		20		5000			
7		20		5000			
8		20		5000			
9		20		5000			
10		20		5000			
11		20		5000			
12		20		5000			
13		20		5000			
14		20		5000			
15		20		5000			
16		20		5000			

Add Dilution Series

Start measurement

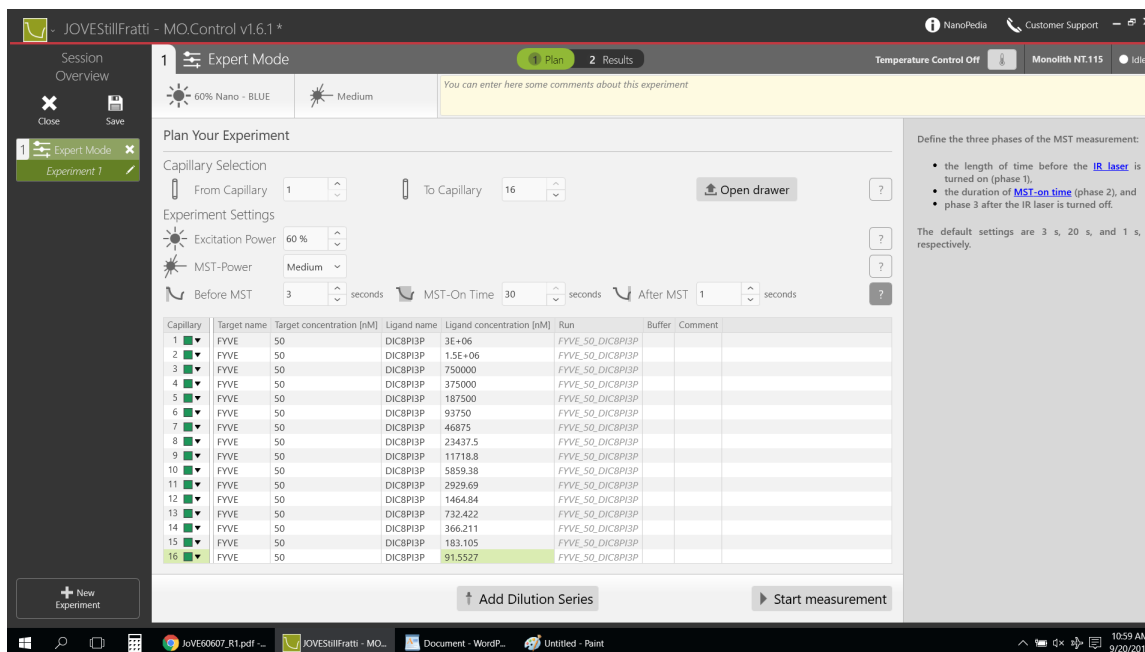
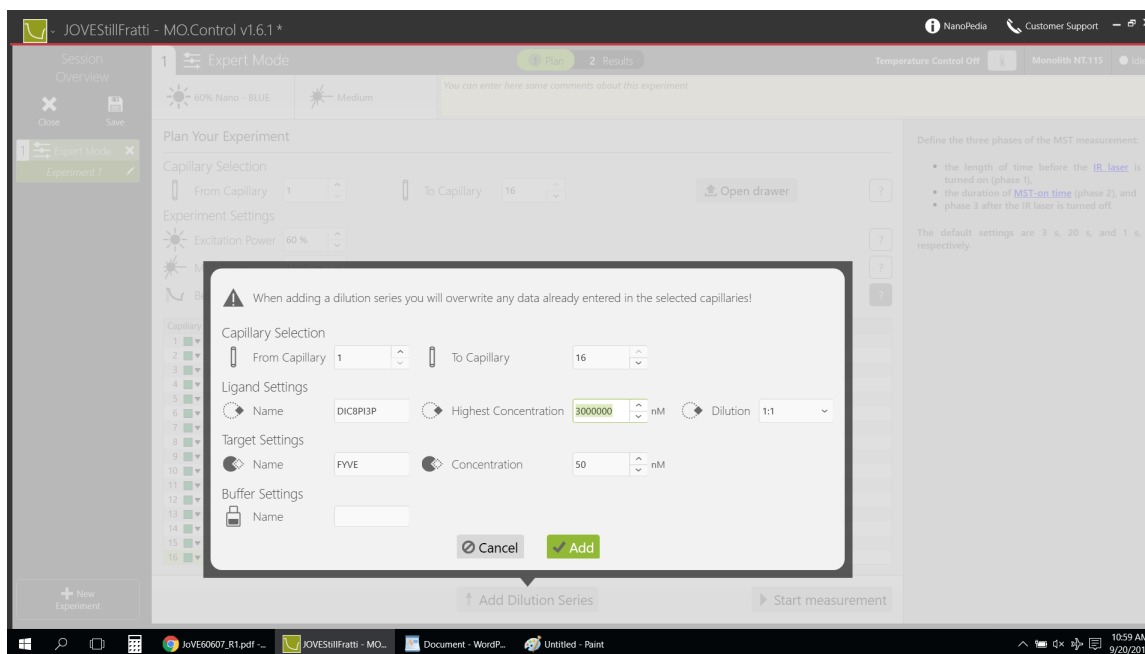
Define the three phases of the MST measurement:

- the length of time before the **IR laser** is turned on (phase 1),
- the duration of **MST-on time** (phase 2), and
- phase 3 after the IR laser is turned off.

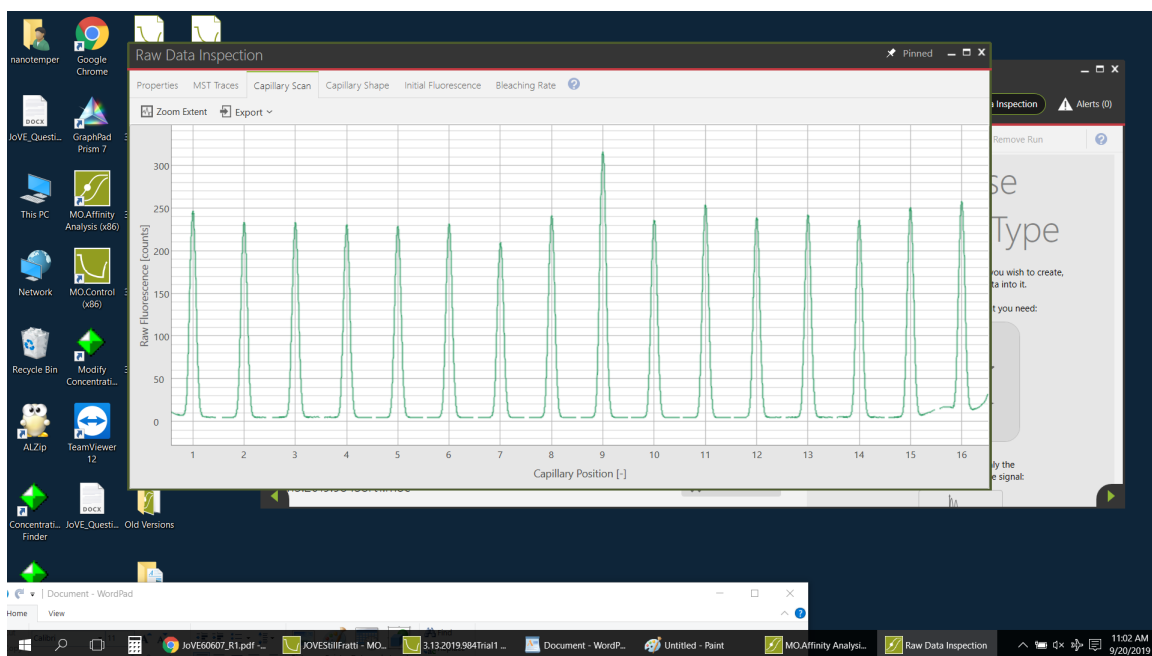
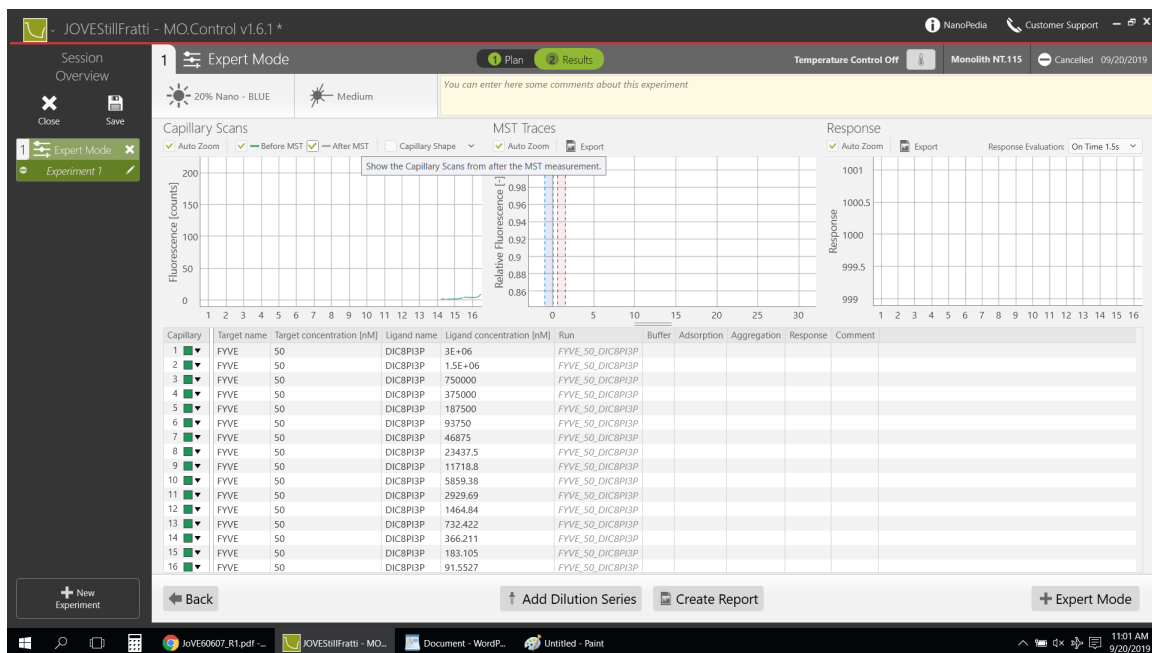
The default settings are 3 s, 20 s, and 1 s, respectively.

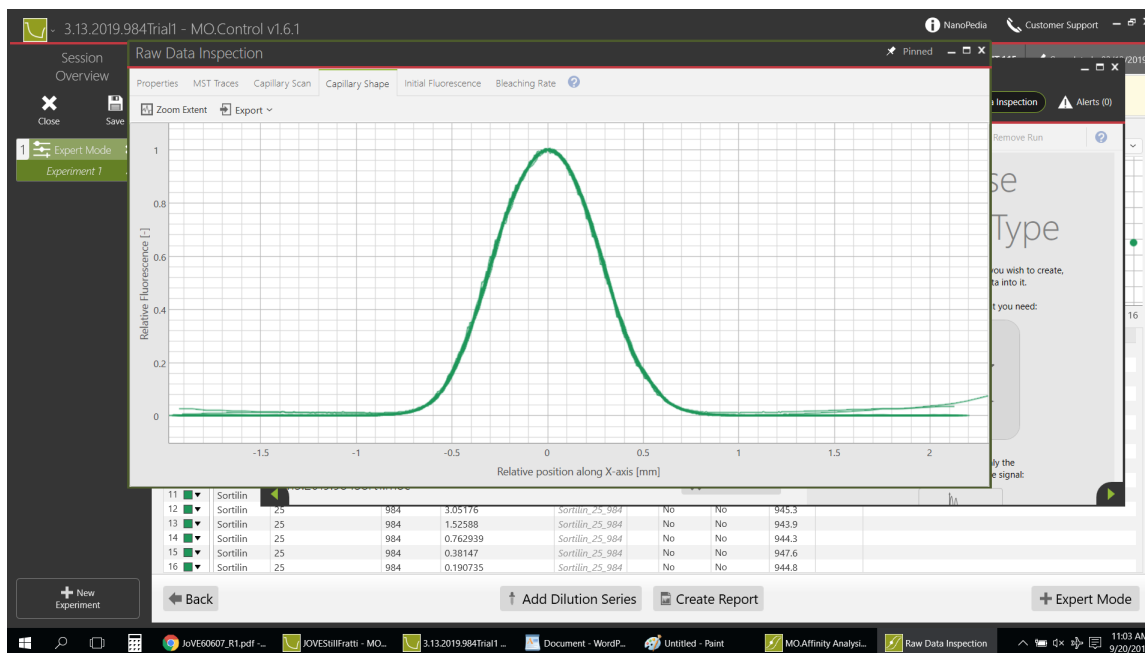
2.5 Table of Capillaries for each capillary tube enter name of target (ligand), name of ligand(analyte), concentration of target, and highest titration concentration and use autofill titration ratio. For example,

here we enter 50 nM for the target concentration of FYVE domain, FYVE domain for target name, Di-C8 PI3P for ligand name, and the highest concentration of 25000 nM selecting 1:1 and dragging down to autofill slots 2-16.



## 2.6 Capscan





#### 4.5.-4.8.

4.5 Enter concentration, position, and name information for each capillary in the Table **as in 2.5**

4.6 Run a capillary scan by hitting Start Cap Scan at 20 % LED (preset) and adjust according between 200 and 2000 fluorescence units using either LED intensity settings or concentration of ligand (labeled protein). **as in 2.6**

4.7 Select a range of MST power. **as in**