

## Quantum Dots Assay Linearity, Reproducibility and Sensitivity

### Introduction

Quantum Dots are a unique class of fluorescent semiconductor nanoparticles that allow scientists in such diverse fields as life science, electronics, and optical engineering to label molecules of interest. Simply modifying the size of the quantum dot particle produces fluorescent labels that can be tuned to specific absorption and emission specifications. The Thermo Scientific NanoDrop™ 3300 Fluorospectrometer can measure as little as 1 ul of sample, thereby significantly scaling-down the reaction volumes commonly needed for conventional cuvette-based fluorometers. This micro-volume capability of the NanoDrop 3300 allows the researcher to run quality control checks for a variety of reagents labeled with Quantum Dots. In addition, the versatility of the white LED allows for the simultaneous measurement of multiple fluorophores.

### Method

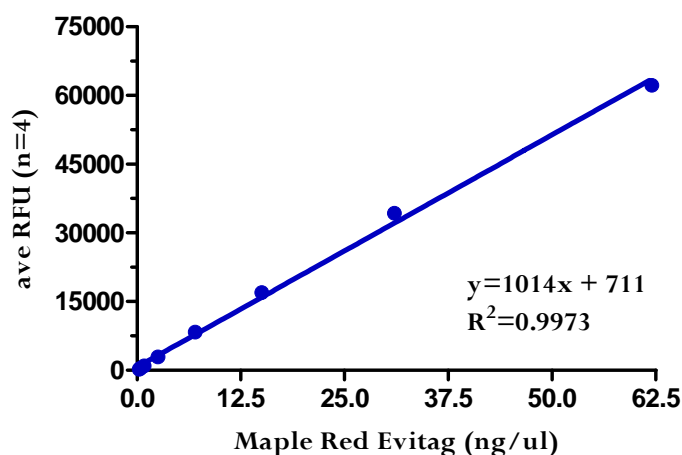
Serially diluted Maple Red Evitags were measured using a 470nm excitation source with the emission wavelength monitored at 615nm.

Micrograms Quantum Dots per assay	Quantum Dot (ng/ul)	Ave RFU (n=4)	Stdev	%CV
0.5	0.25	238	5.9	2.5
0.9	0.45	493	6.6	1.3
1.7	0.85	953	22.4	2.4
5	2.5	2913	79.2	2.7
14	7	8353	61.1	0.73
30	15	16941	223.0	1.32
62	31	34309	478.1	1.39
124	62	62245	126.7	0.20

Linearity was shown between 0.25 ng/ul to 62ng/ul.

### Results

Maple Red Evitag Linearity on the NanoDrop 3300



Maple Red Evitag Linearity on the NanoDrop 3300

Low concentration range

