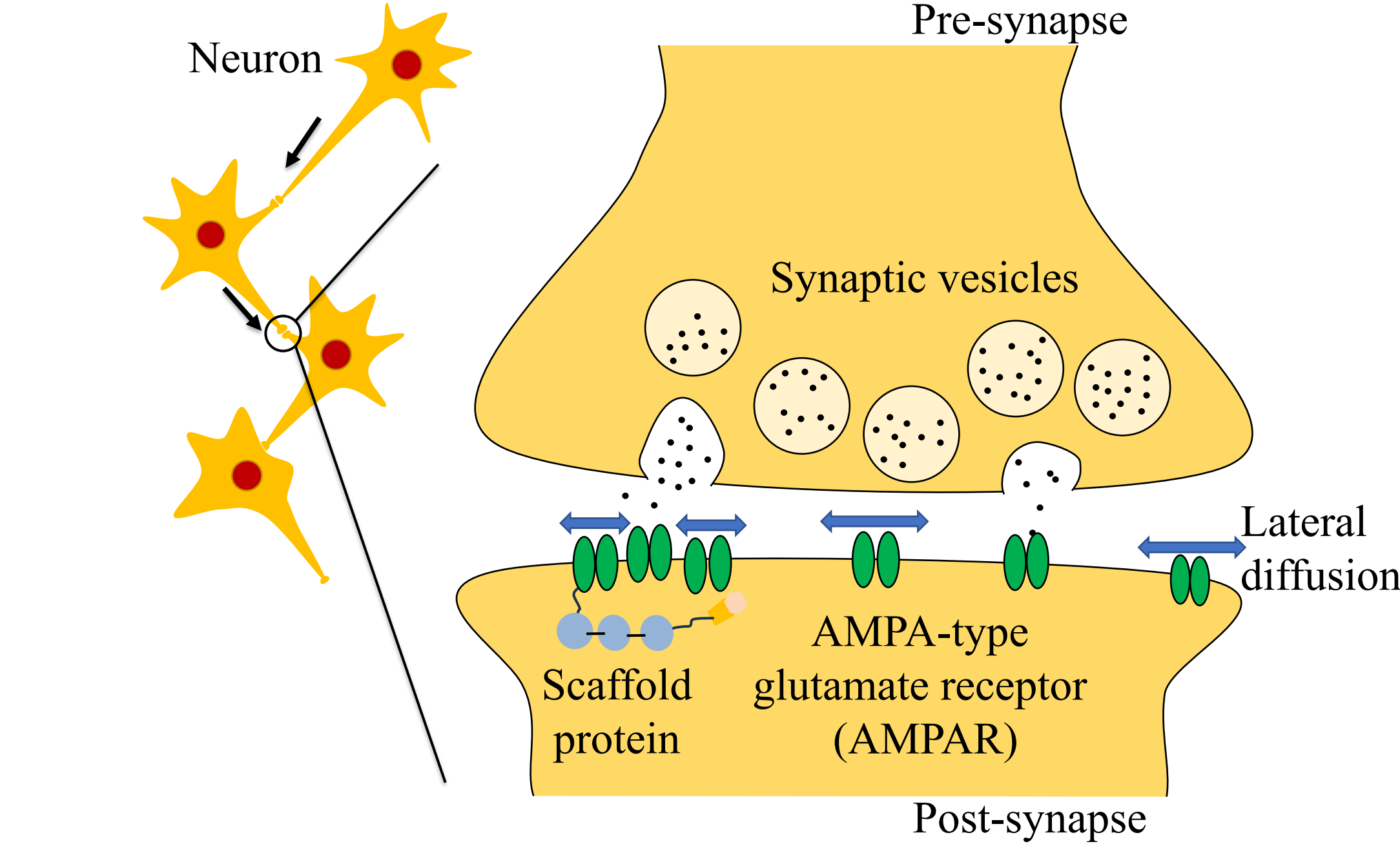


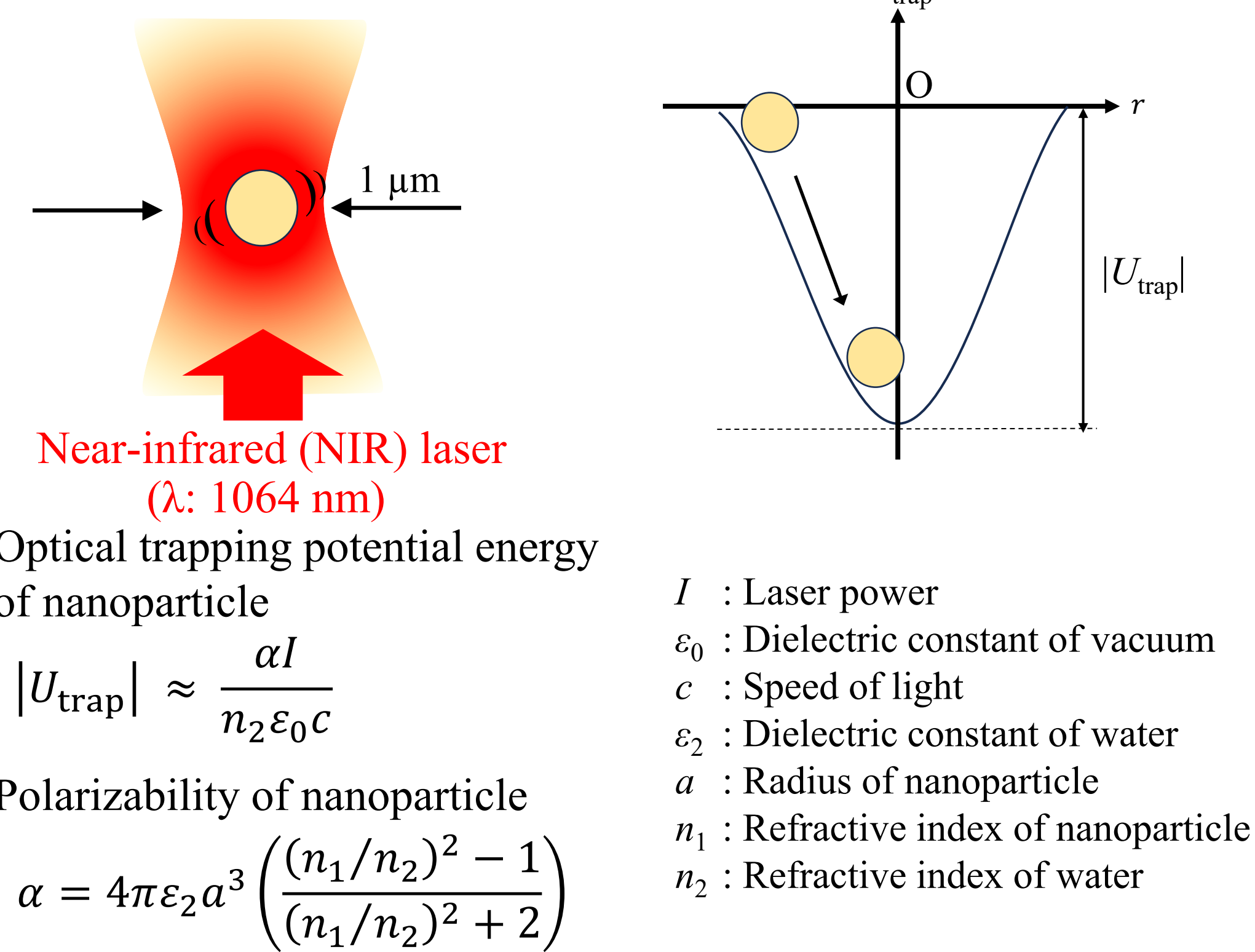
Introduction

Synaptic transmission efficiency in neuron

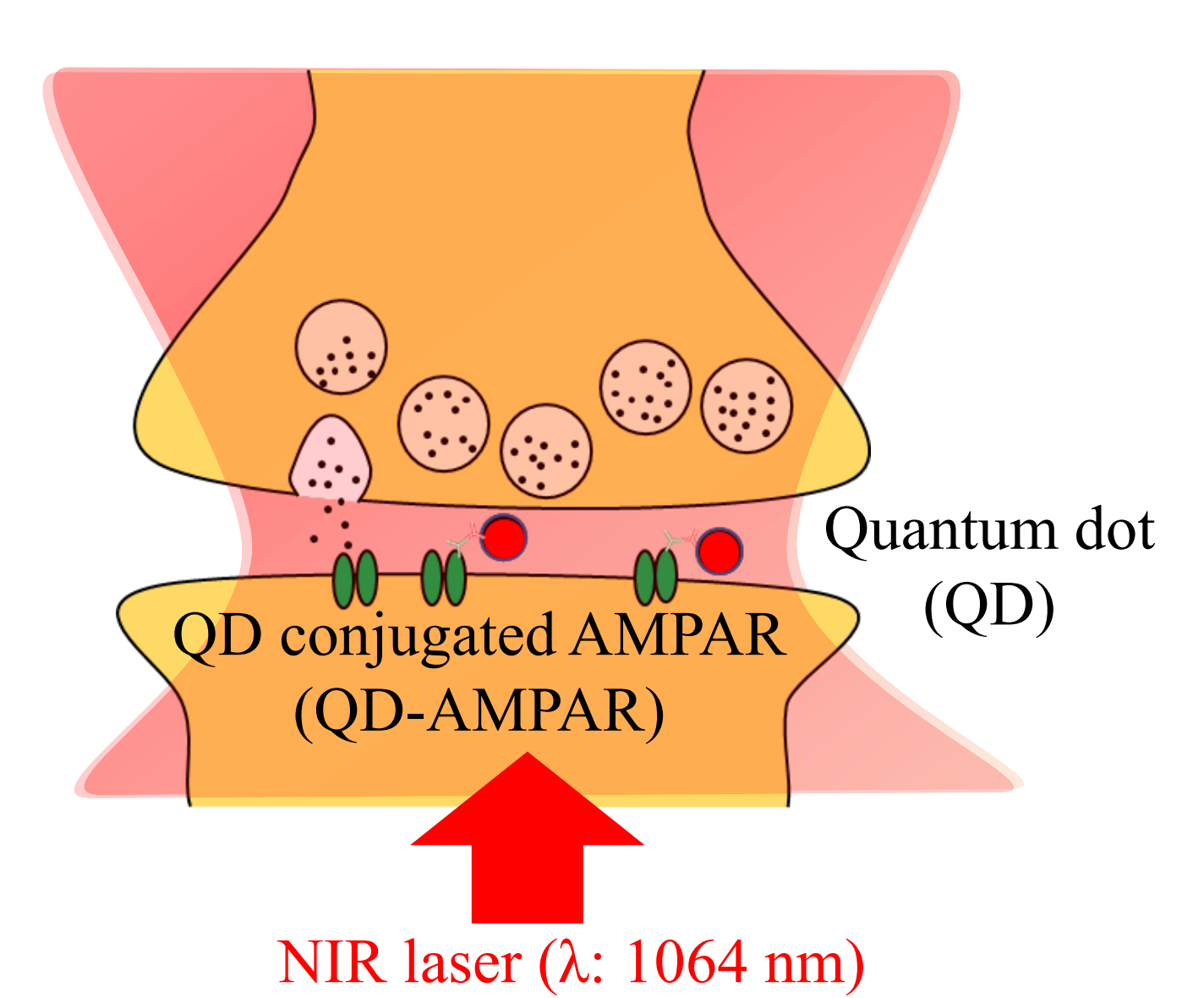


The molecular dynamics of AMPARs is related to synaptic plasticity.

Optical trapping



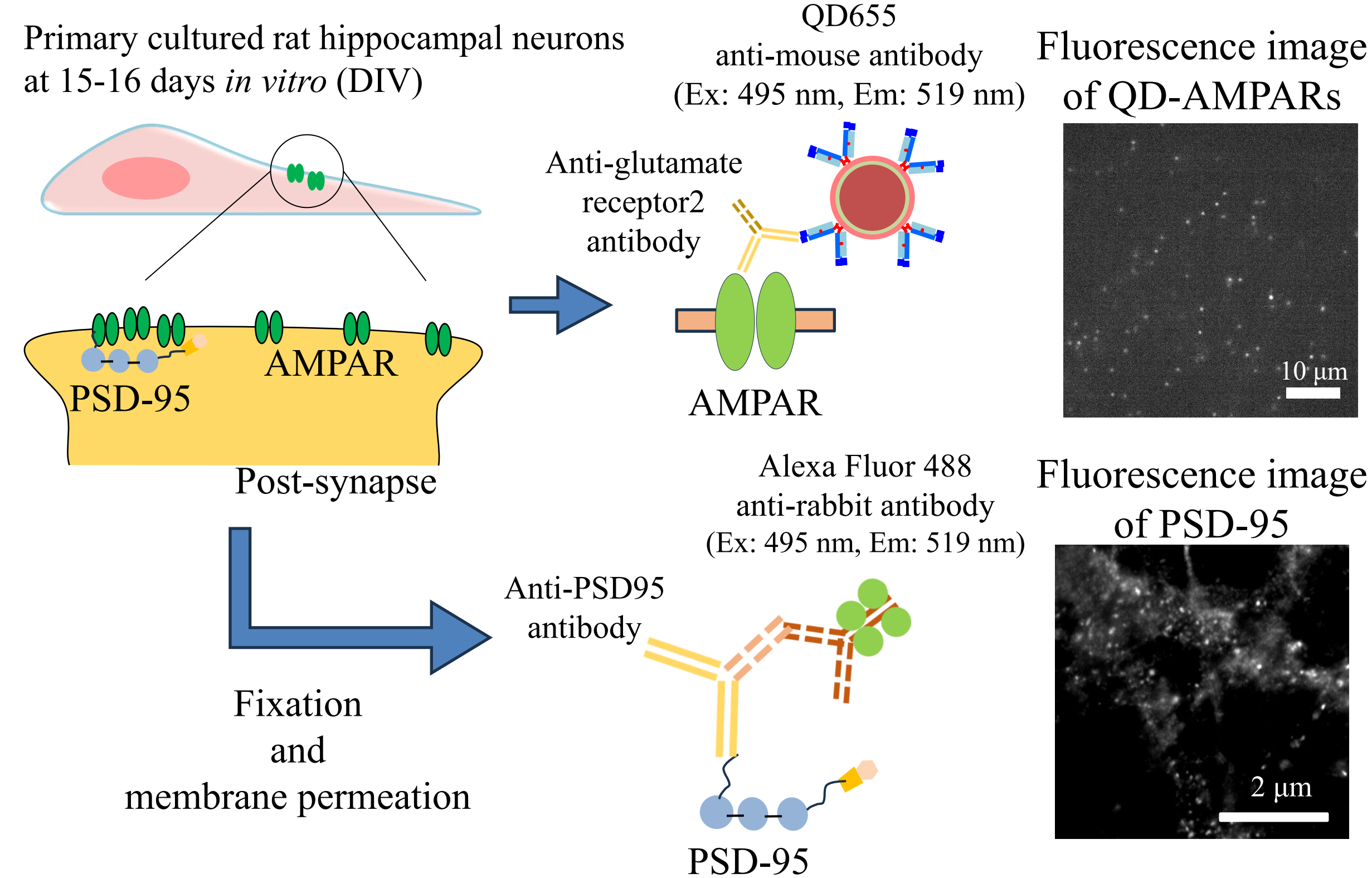
Optical trapping of glutamate receptors



Optical trapping of QD-AMPA on neuronal cells to achieve external control of synaptic transmission efficiency

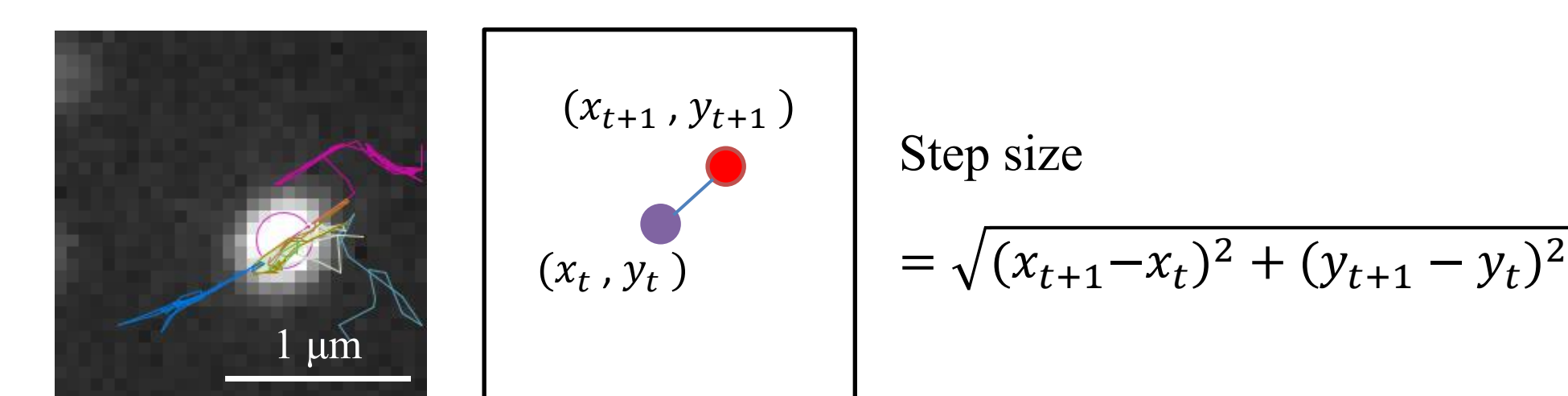
Materials and Methods

Immunofluorescence staining of molecules in neurons

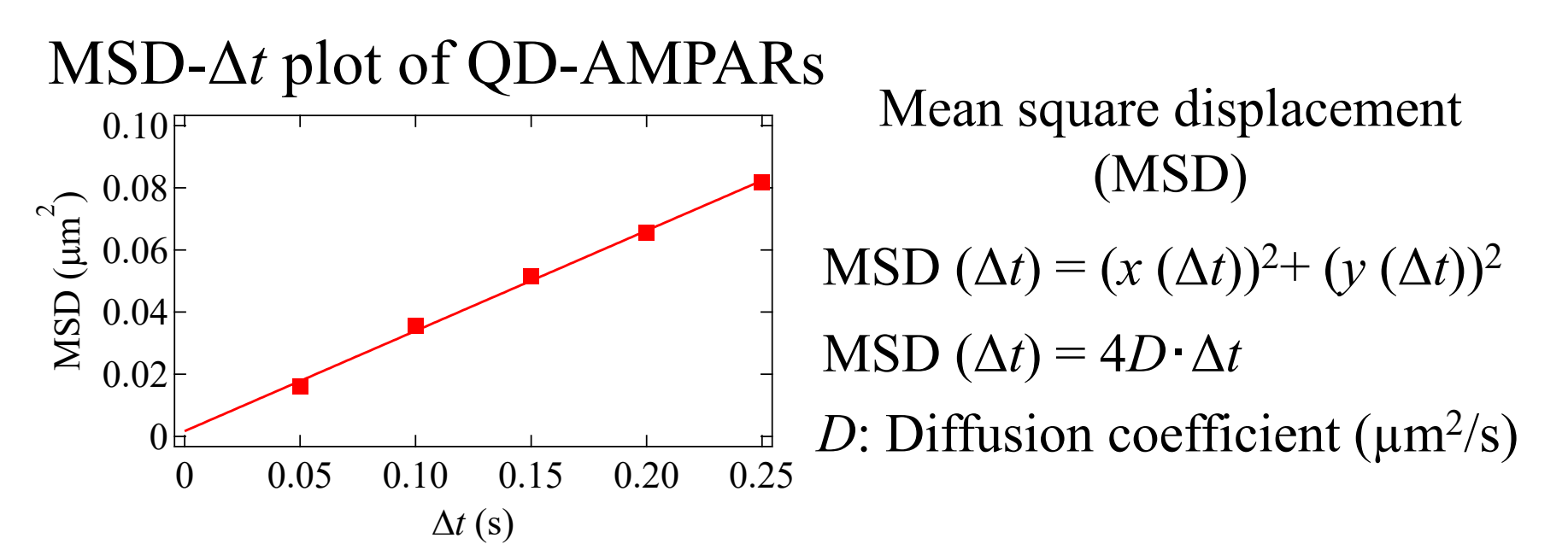


Single particle tracking analysis of QD-AMPA

Step size between two consecutive frames



Diffusion coefficient



Results and Discussion

Conclusion

- Molecular diffusion of QD-AMPA in neuronal membranes are confined depending on laser power and irradiation time.
- Optical trapping suppressed QD-AMPA diffusion near PSD-95 and may alter their interactions with local confinement structures.