

Figure 1– figure supplement 1. Levels of peIF2 $\alpha$  return to baseline 48h following application of tRNA

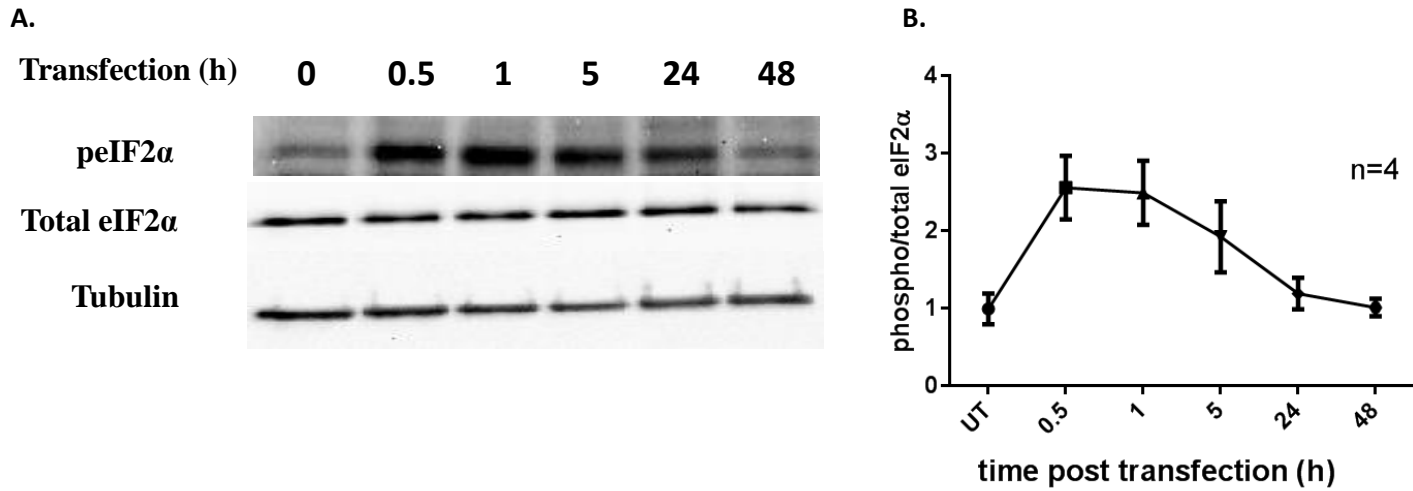


Figure 1 – figure supplement 2. Mature culture has more tRNA puncta in the soma and more condensed tRNA puncta regions (“hot spots”) in comparison to young culture.

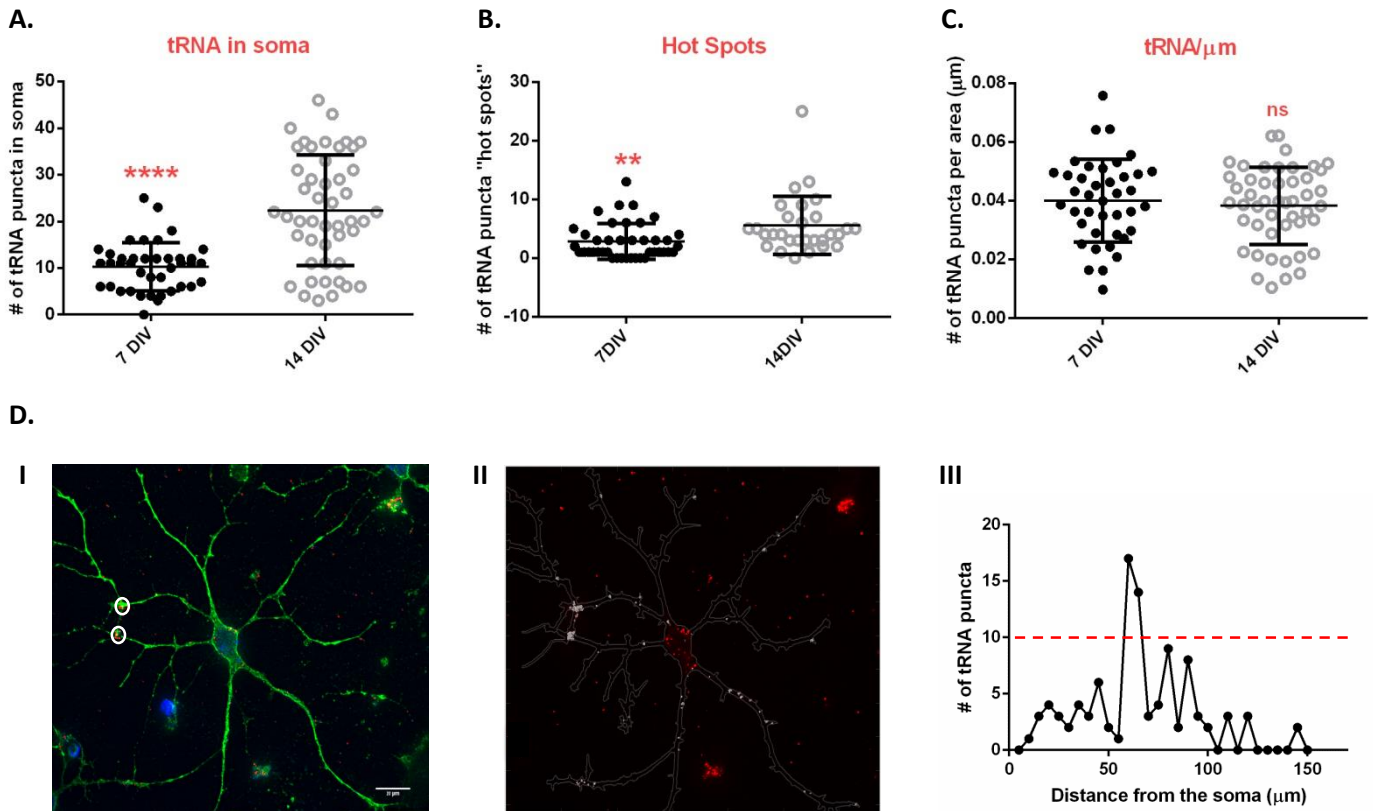


Figure 2 – figure supplement 1. Total amount of tRNA puncta remains unchanged in all measured time points

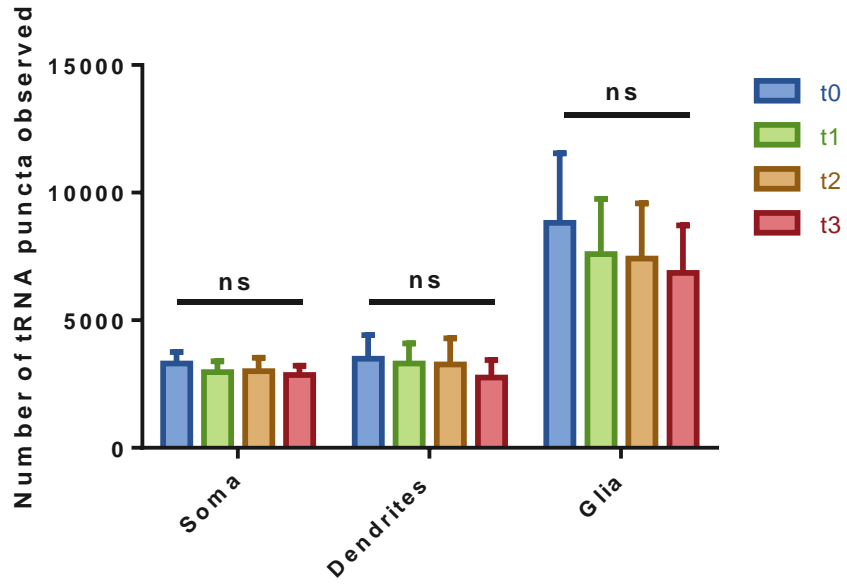


Figure 4 – figure supplement 1. Determination of the spatial resolution of dSTORM

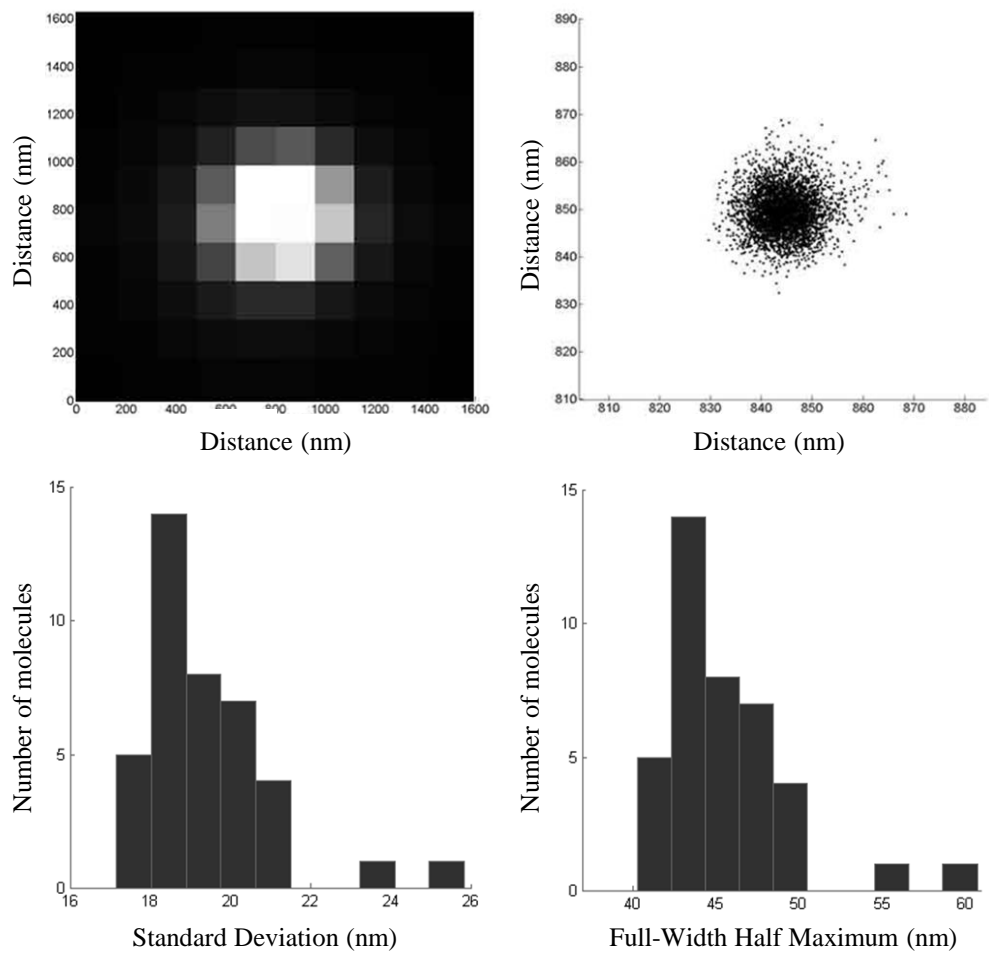
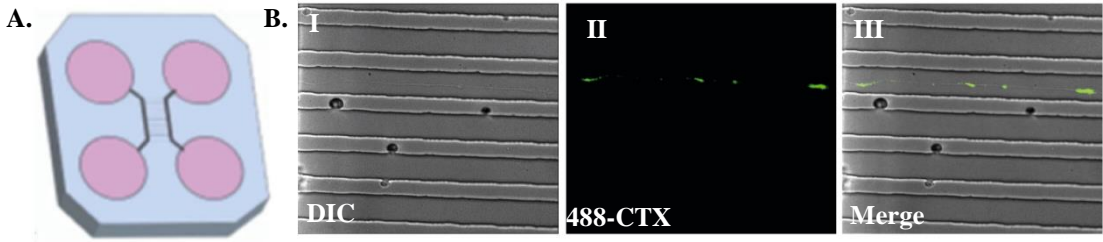
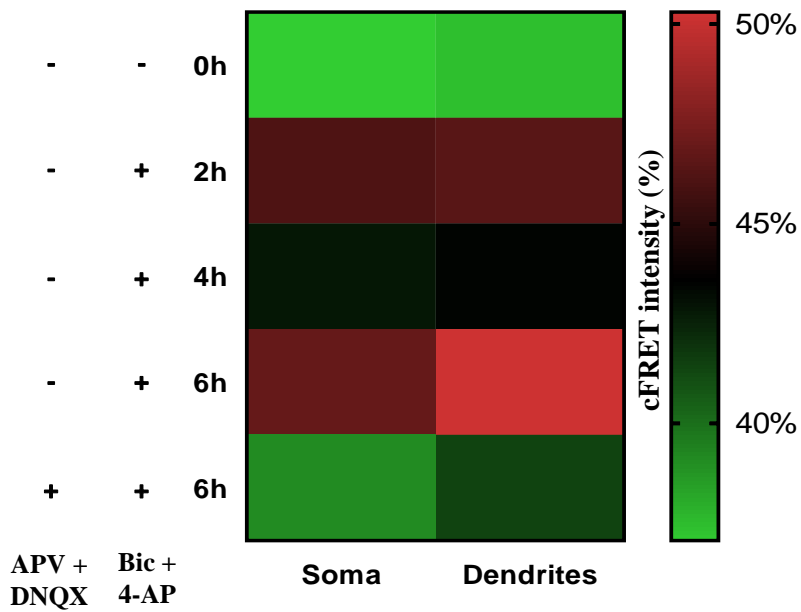


Figure 5 – figure supplement 1. Illustration of a Microfluidic chamber

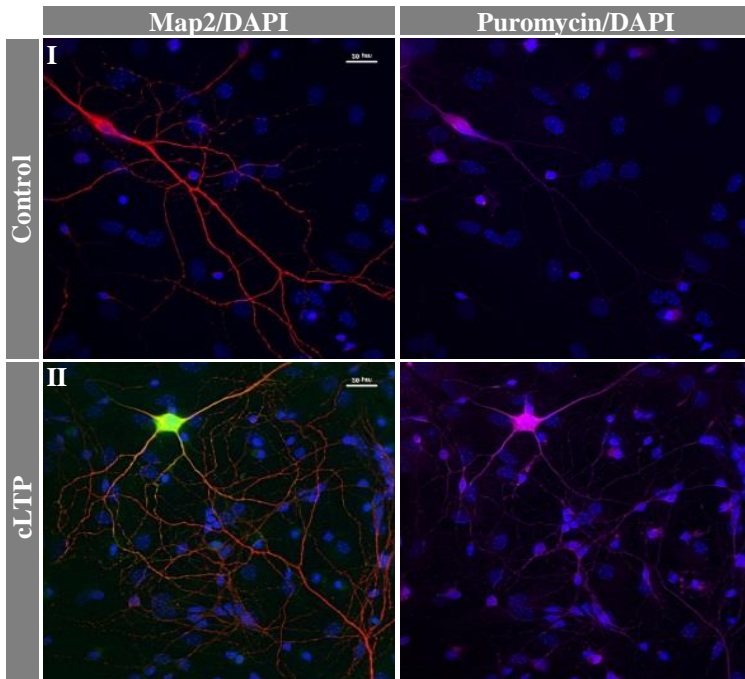


**Figure 6 – figure supplement 1. Biphasic pattern of mRNA translation up-regulation is apparent in both neuronal somata and dendrites separately**



**Figure 6 – figure supplement 2. Immunocytochemical SUNSET shows mRNA translation up-regulation following cLTP**

A.



B.

