## Contents

1. General introduction  
2. Additive effects on the energy barrier for synaptic vesicle fusion cause supralinear effects on the vesicle fusion rate  
3. Synaptotagmin-1 clamps spontaneous release independently of effects on the energy barrier for synaptic vesicle fusion  
4. A dual-sensor model for the $\text{Ca}^{2+}$ sensitivity of synaptic vesicle release in the presence and absence of Synaptotagmin  
5. Reduction of the energy barrier for synaptic vesicle fusion during short-term synaptic plasticity  
6. Spatial distribution of primed vesicles in the calyx of Held is strongly skewed towards $\text{Ca}^{2+}$ channel clusters  
7. General discussion