

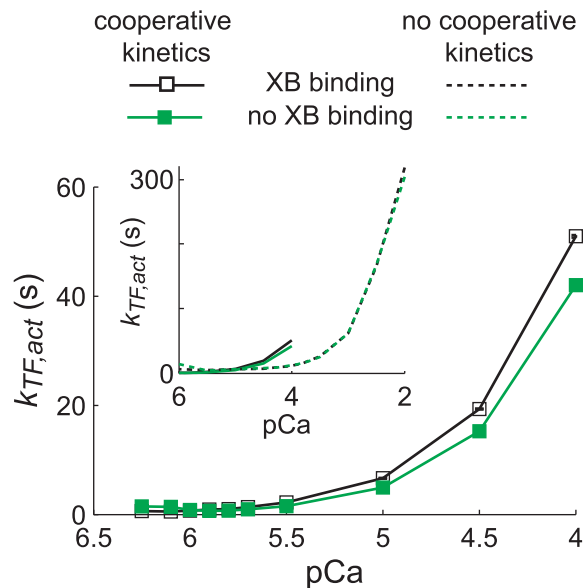


Figure S3: Cooperative thin filament activation kinetics slow the rate of thin filament activation. The rate of thin filament activation ($k_{TF,act}$) is plotted against pCa, illustrating that kinetic forms of cooperativity considerably slow thin filament activation compared to simulations without cooperative thin filament activation kinetics. In the presence of cooperative kinetics, XB binding also increased $k_{TF,act}$. In the absence of cooperative kinetics, XB binding had a minimal effect on $k_{TF,act}$ (inset). Simulations used standard parameter values: $k_{xb}=3$ pN nm⁻¹, $k_{fil}=k_m=k_a=1X$, and $RU_{span}=9$ actins.