



**Fig. S1. The interplay among calcium, magnesium and potassium ions on ATP-N binding to gelsolin.** In the absence of divalent cations, the anisotropy of ATP-N (0.5  $\mu\text{M}$ ) increased with increasing gelsolin concentration and this interaction was potassium ion dependent. The  $K_d$ s calculated from the binding curves fitted with Eq. 2 showed diminishing affinities with increasing potassium ion concentrations (blue triangles). Inclusion of 1 mM  $\text{MgCl}_2$  slightly weakened the affinity of ATP-N for gelsolin (magenta circles) at 100 mM and 120 mM KCl (K, potassium ions, KM, potassium and magnesium ions).