



Movie 1. Real-time video of spontaneous unraveling of *E. stoutii* slime thread skeins in 1 M NaCl at 22°C. Note how unraveling proceeds from the apical tip of the skein.



Movie 2. Time lapse video of *E. stoutii* slime thread skeins over 5 minutes in 0.25 M NaCl + 0.5 mg ml⁻¹ trypsin at 35°C. Note how unraveling proceeds from the apical tip of the skein, much like spontaneous unraveling in 1 M NaCl at 22°C (see supplementary material Movie 1).



Movie 3. Time lapse video of *E. stoutii* slime thread skeins for the duration of 5 minutes in 0.25 M NaCl at 35°C. Note how unraveling does not occur in the absence of trypsin under these conditions.