



Figure S4. The velocity maps in Fig. 7 are shown in segmented form here. Red regions: velocity (nm/s)  $> 5.0$ ; yellow regions:  $1.0 < \text{velocity (nm/s)} < 5.0$  and contacting a red region; white regions:  $1.0 < \text{velocity (nm/s)} < 5.0$  but not contacting a red region; black regions: velocity (nm/s)  $< 1.0$ . The contiguous red/yellow regions are considered *bona fide* protrusions.