





Supplementary Fig. 1. Example of imaging activity of motorneurons during semi-restrained locomotion with YC3.60. a) Ratio signals of ventral (VB7) and dorsal (DB5) B-motorneurons (comparable to Fig. 2b bottom traces) during forward (green bar >>>) and backward (red bar <<<) locomotion. The asterisk (\*) marks a period when locomotion stopped. b) The same traces filtered (band-pass 0.25-4 Hz) to emphasize undulation frequencies (comparable to Fig. 3b; notice the different scale bar). No alternating activity between VB7 (green) and DB5 (blue) is evident during the two bouts of forward locomotion (green bars) which comprised 4 and 19 undulations respectively. c) Cross correlation of ratio changes between the filtered traces (comparable to Fig. 3b). The main peak is inphase (at 0.16 sec), which correspond to in-synch rather than alternating activity.