



Fig. S1 Global displacement of mesoderm progenitors. Initial and final frames of Movie 3 demonstrate the displacement of cell populations rather than the long-distance migration of individual cells.

Movie 1

Elongation motion in Hensen's node region fated to the neurectoderm. Time-lapse analysis of the GFP population comprising the posterior neural plate and the node region. Frames are 5 min apart. Cell behaviours of this movie are summarized in Fig. 3a.

Movie 2

Coherent behaviour of neural progenitors. Two adjacent GFP-expressing cells retain their relative locations (coherence) during Hensen's node progression.

Movie 3

Elongation motion in Hensen's node region fated to the mesoderm. Clusters of axial (mesoderm) progenitors labelled by *DiI* become progressively displaced from each other while individual cells migrate away into the mesoderm.