

Electronic Supplementary Information (ESI)

Highly efficient microfluidic sorting device for synchronizing developmental stages of *C. elegans* based on deflecting electrotaxis†

Xixian Wang,^{‡a} Rui Hu,^{‡ab} Anle Ge,^a Liang Hu,^a Shanshan Wang,^a Xiaojun Feng,^a Wei Du^{*a} and Bi-Feng Liu^{*a}

^a Britton Chance Center for Biomedical Photonics at Wuhan National Laboratory for Optoelectronics-Hubei Bioinformatics & Molecular Imaging Key Laboratory, Systems Biology Them, Department of Biomedical Engineering, College of Life Science and Technology, Huazhong University of Science and Technology, Wuhan 430074, China

^b Institute of Hydrobiology, Chinese Academy of Sciences, Wuhan, Hubei Province 430072, China

[‡] Xixian Wang and Rui Hu are equally contributing authors

* Corresponding author:

bfliu@mail.hust.edu.cn (B.-F. Liu);

weidu@mail.hust.edu.cn (W. Du)

Tel: +86-27-87792203

Fax: +86-27-87792170

Supplementary movie:

The movie shows the simultaneous sorting of worms cultured in a matter of days generating successive offspring at 10 V cm⁻¹.

Supplementary Fig. S1:

Deflecting electrotaxis of young adult wild type *C. elegans* and mutation in *lon-2* on the surface of an agarose gel. The angles of *lon-2* at different strengths of electric field were bigger than that of wild type worms suggesting that the deflecting electrotaxis of *C. elegans* was size-dependent. Data points denote the mean ± SEM of approach angles of 35 worms.

Supplementary Fig. S2:

Deflecting electrotaxis of young adult hermaphrodites and males. The males also showed deflecting electrotactic behaviour. More importantly, the angle of males was smaller than that of hermaphrodites under the same electric field. Data points denote the mean ± SEM of approach angles of 35 worms.

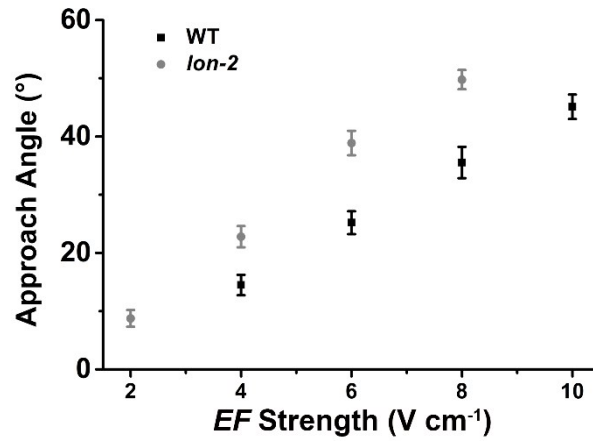


Fig. S1 Deflecting electrotaxis of young adult wild type *C. elegans* and mutation in *lon-2* on the surface of an agarose gel. The angles of *lon-2* at different strengths of electric field were bigger than that of wild type worms suggesting that the deflecting electrotaxis of *C. elegans* was size-dependent. Data points denote the mean \pm SEM of approach angles of 35 worms.

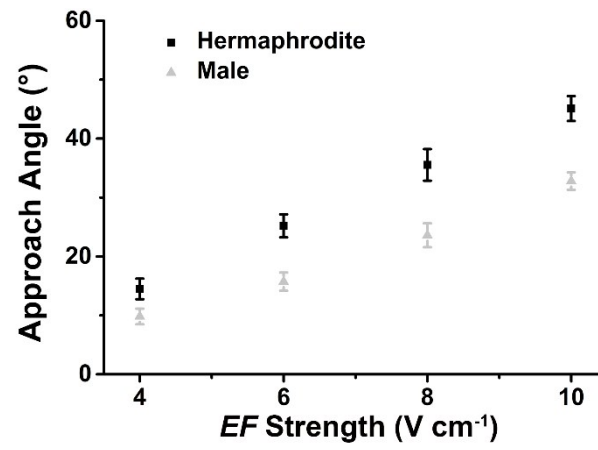


Fig. S2 Deflecting electrotaxis of young adult hermaphrodites and males. The males also showed deflecting electrotactic behaviour. More importantly, the angle of males was smaller than that of hermaphrodites under the same electric field. Data points denote the mean \pm SEM of approach angles of 35 worms.