

[advances.sciencemag.org/cgi/content/full/6/28/eaba5855/DC1](https://advances.sciencemag.org/cgi/content/full/6/28/eaba5855/DC1)

## Supplementary Materials for

### **IRONsperm: Sperm-templated soft magnetic microrobots**

Veronika Magdanz\*, Islam S. M. Khalil\*, Juliane Simmchen, Guilherme P. Furtado, Sumit Mohanty, Johannes Gebauer, Haifeng Xu, Anke Klingner, Azaam Aziz, Mariana Medina-Sánchez, Oliver G. Schmidt, Sarthak Misra

\*Corresponding author. Email: [veronika.magdanz@tu-dresden.de](mailto:veronika.magdanz@tu-dresden.de) (V.M.); [i.s.m.khalil@utwente.nl](mailto:i.s.m.khalil@utwente.nl) (I.S.M.K.)

Published 8 July 2020, *Sci. Adv.* **6**, eaba5855 (2020)  
DOI: 10.1126/sciadv.aba5855

#### **The PDF file includes:**

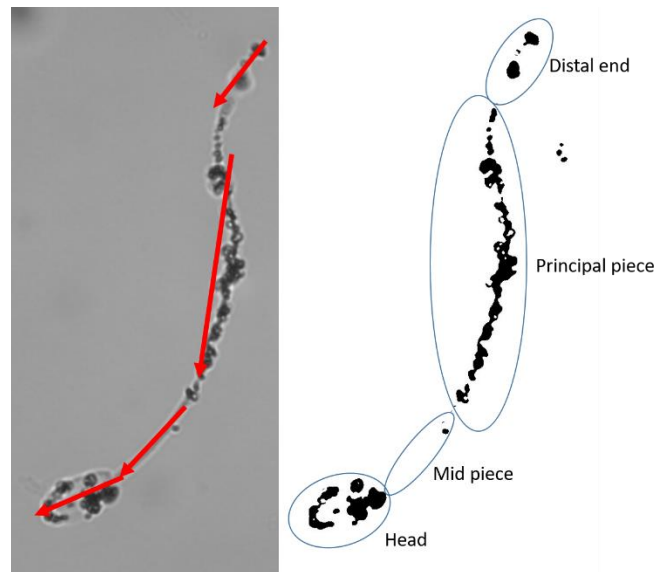
Figs. S1 and S2

#### **Other Supplementary Material for this manuscript includes the following:**

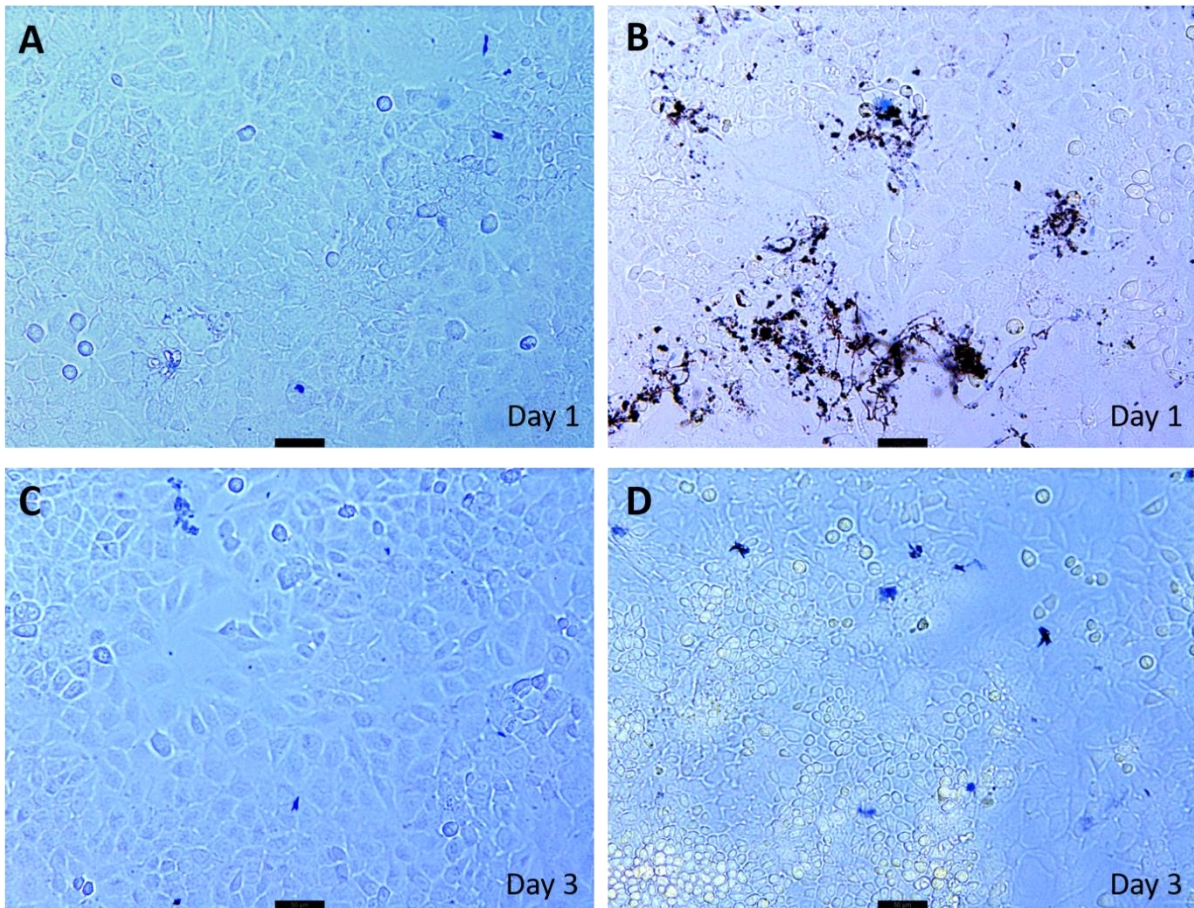
(available at [advances.sciencemag.org/cgi/content/full/6/28/eaba5855/DC1](https://advances.sciencemag.org/cgi/content/full/6/28/eaba5855/DC1))

Movies S1 to S7

## SUPPLEMENTARY MATERIALS



**Figure S1:** Measurement of particle-covered areas on IRONsperm with ImageJ image analysis program by subtracting the background and measuring the area covered by particles for each sperm segment.



**Figure S2:** Cytotoxicity test of IRONSperm in Ishikawa cell culture. Trypan blue stain on A) Ishikawa cells after 24 hours (Control) B) IRONSperm co-cultured with Ishikawa cells after 24 hours, C) Ishikawa cells after 3 days (control) and D) Ishikawa cells co-cultured with IRONSperm. Sperm cells have disintegrated and residues of iron oxide particle aggregates are visible. Dead cells appear dark blue, live cells appear light blue. Scale bars 50µm.