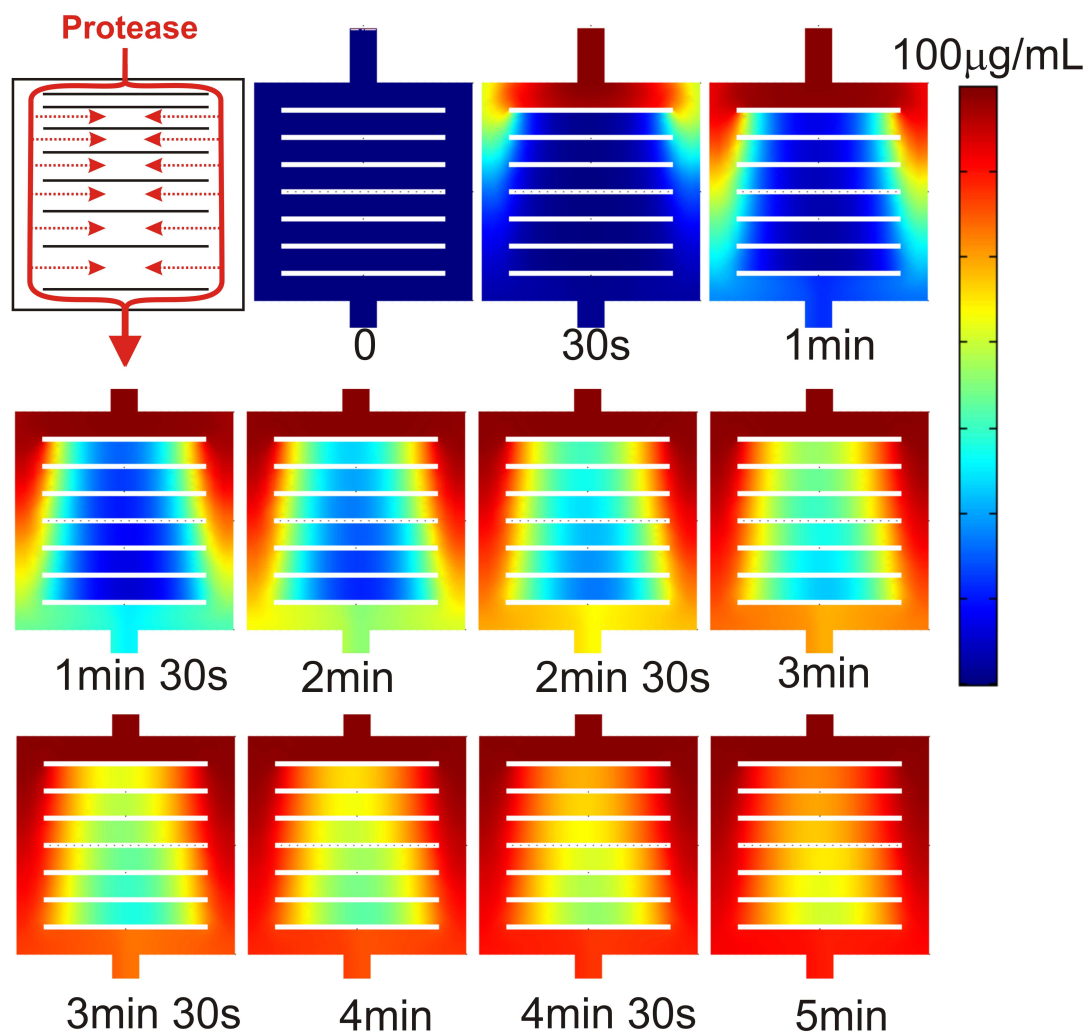


## Electronic Supplementary Information

**Figure ESI 1**

Finite element simulation (Comsol) of the diffusion of protease into the trap area of the device under an injection rate of 0.6 nL/min of a protease solution (100 µg/mL). The protease concentration is above 50 µg/mL for time after 4 minutes. The diffusion constant<sup>1</sup> of protease K is  $77.4 \cdot 10^{-12} \text{ m}^2 \cdot \text{s}^{-1}$ .

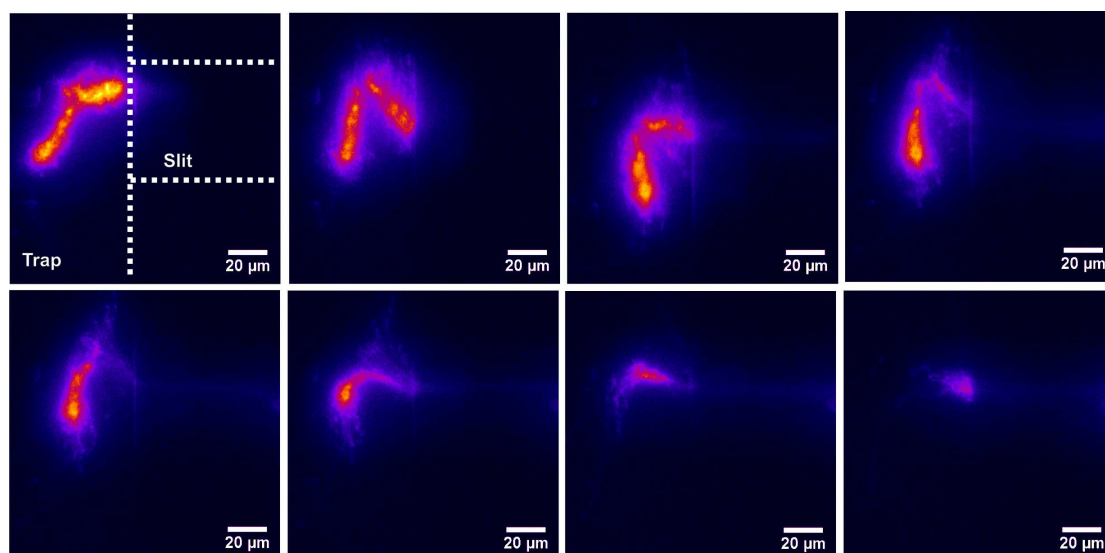
**ESI2:**

Movie for PC

<http://dl.dropbox.com/u/5847222/RasmussenK-ESI2-xvid.avi>

For Mac

<http://dl.dropbox.com/u/5847222/ESI2.mp4>

**Frames from Movie ESI 2**

Frames from movie ES12 showing the DNA extracted from a chromosome being introduced from the trap area into the 100nm high slit. The majority of the chromosomal DNA is pushed inside the slit while a portion of DNA from one chromatid is retained at the slit entry point.

**ESI3: movie**

Real time sequence of the DNA depicted in ESI3 inset. Loose DNA loops are clearly visible.

<http://dl.dropbox.com/u/5847222/RasmussenK-ESI3-xvid.avi>

for Mac:

<http://dl.dropbox.com/u/5847222/ESI3.mp4>

**References**

1. M. Nakajima, K. Mizusawa and F. Yoshida, *European Journal of Biochemistry*, 1974, **44**, 87-96.