

## ***Supporting Information***

### **Smart early diagnosis of acute myocardial infarction: A ZIF-based nanofluorescent lateral flow immunoassay for point-of-care detection of cTnI**

Zahra Mirzaeizadeh<sup>a</sup>, Emadoddin Amin Sadrabadi<sup>a</sup>, Neda Naseri<sup>a</sup>, Hamed  
Golmohammadi<sup>b,c\*</sup>, Kobra Omidfar<sup>a,d\*</sup>

<sup>a</sup>Biosensor Research Center, Endocrinology and Metabolism Molecular–Cellular Sciences  
Institute, Tehran University of Medical Sciences, P.O. Box 14395/1179, Tehran, Iran

<sup>b</sup>Nanosensor Bioplatfroms Laboratory, Chemistry and Chemical Engineering Research  
Center of Iran, 14335-186 Tehran, Iran

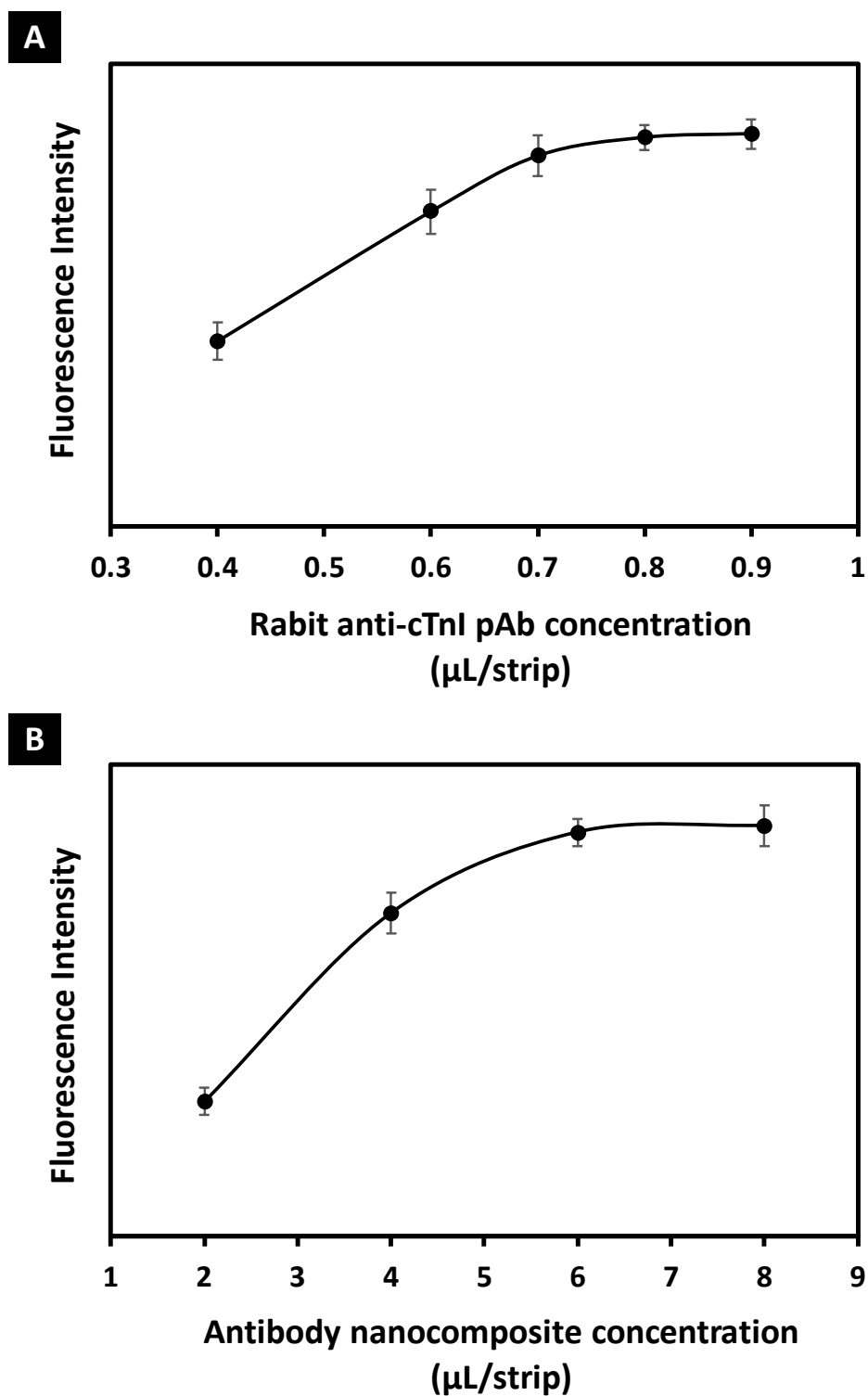
<sup>c</sup>IMTEK – Department of Microsystems Engineering, University of Freiburg, Freiburg  
79110, Germany

<sup>d</sup>Endocrinology and Metabolism Research Center, Endocrinology and Metabolism Research  
Institute, Tehran University of Medical Sciences, Tehran, Iran.

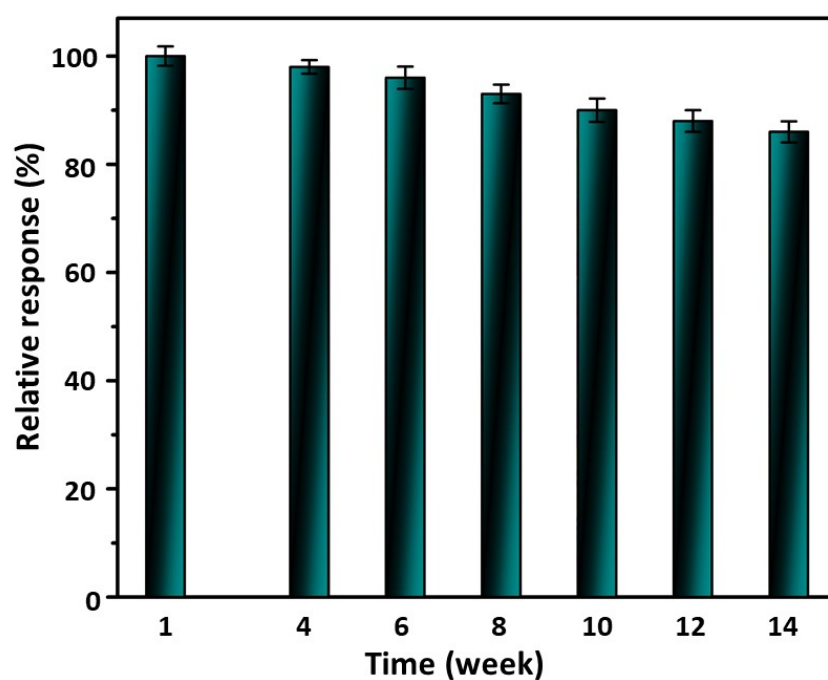
\* Corresponding Authors:

Kobra Omidfar, Email: [omidfar@tums.ac.ir](mailto:omidfar@tums.ac.ir)

Hamed Golmohammadi: [hamed.golmohammadi@imtek.uni-freiburg.de](mailto:hamed.golmohammadi@imtek.uni-freiburg.de),  
[golmohammadi@ccerci.ac.ir](mailto:golmohammadi@ccerci.ac.ir)



**Fig. S1.** Effect of the various concentrations of anti-human cTnI polyclonal antibody (0.4, 0.6, 0.7, 0.8, and 0.9  $\mu\text{g}/\text{strip}$ ) (**A**), and ZIF-8@ BSA Au/Ag NCs-mAb (2, 4, 6, and 8  $\mu\text{L}/\text{strip}$ ) (**B**) on the fluorescence signal of LFIA.



**Fig. S2.** Stability of the ZIF-8@ BSA Au/AgNCs based LFIA during 14 weeks at 4°C

**Table S1.** Repeatability (intra-assay) and reproducibility (inter-assay) of fabricated LFIA

| cTnI concentration<br>(pg mL <sup>-1</sup> ) | intra-assay |       |        | inter-assay |      |        |
|----------------------------------------------|-------------|-------|--------|-------------|------|--------|
|                                              | mean        | SD    | CV (%) | mean        | SD   | CV (%) |
| 10                                           | 41.30       | 1.53  | 3.70   | 42.30       | 2.08 | 4.90   |
| 80                                           | 63.30       | 1.065 | 1.68   | 62.30       | 2.08 | 3.34   |
| 150                                          | 72.60       | 1.53  | 2.10   | 73.16       | 1.17 | 1.59   |