
Supporting Information

Quench-release-based Fluorescent Immunosensor for the Rapid Detection of Tumor Necrosis Factor-alpha

Haimei Li¹, Xinyu Li¹, Limei Chen¹, Baowei Li¹, Hang Dong², Hongying Liu¹,
Xueying Yang¹, Hiroshi Ueda^{3,4*} and Jinhua Dong^{1,3,4*}

¹Key Laboratory for Biological Medicine in Shandong Universities, Weifang Key Laboratory for Antibody Medicine, School of Life Science and Technology, Weifang Medical University, Weifang, 261053, China.

²School of Basic Medical Sciences, Peking University, Beijing 100191, China.

³World Research Hub Initiative, Institute of Innovative Research, Tokyo Institute of Technology, Yokohama 226-8503, Japan.

⁴Laboratory for Chemistry and Life Science, Institute of Innovative Research, Tokyo Institute of Technology, Yokohama, 226-8503 Japan

*Authors to whom correspondence should be addressed;

E-mail: dongjh@wfmcc.edu.cn (J.D.); ueda@res.titech.ac.jp (H.U.)

Figure S1. The amino acid sequence of UQ1H-Fab. V_H and V_L sequences are shown in magenta and blue, respectively. Tryptophan residues in V_H and V_L are shown in bold. Cysteine in cys-tag is underlined.

UQ1H-Fab V_H-C_H1

MAQIEVN**C**SNETGEVQLVESGGGLVQPGRSLRLSCAASGFTFDDYAMH**W**VRQAPGKGLE**W**VS
 AIT**W**NSGHIDYAD**S**VEGRFTISRDN**A**KN**S**LYLQMN**S**LR**A**EDTAVYY**C**AKV**S**YLSTASSLDY**W**GQ
 G**T**LV**T**V**S**SASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL
 QSSGLY**S**LS**S**V**T**VPSSSLGTQTYICNVNHKPSNTKVDK**K**VEPKSASAAHHHHHHHGAAEQKLIS
 EEDLN**G**AA

UQ1H-Fab Light Chain

MDIQMTQSPSSLSASV**G**DRVTITCRASQ**G**IRNYLAWY**Q**Q**K**PGKAPKLLIYA**A**ASTLQSGVPSRFSG
 S**G**SGTDFLT**I**SS**L**Q**P**EDVATYYC**Q**RYNRAPY**T**FG**Q**GT**K**LEIKRADAAPS**V**FIFPPSDEQLK**S**GTA
 SVV**C**LLNNFYP**R**EAKVQWKVDNALQ**S**GN**S**Q**E**S**V**TEQ**D**SKDSTYLS**S**TLT**L**SKADY**E**KHKVYAC
 EVTHQ**L**SSPVTK**S**FN**R**GEGGGSDYK**D**DDDK

Figure S2. Absorption spectra of QB1-TMR, QB2-TMR, QB1-ATTO and QB2-ATTO. For double labeled Q-body with TAMRA, a peak at 520 nm, for that with ATTO520, a peak at around 490 nm were also observed, which are derived from H-dimer, respectively.

