Supplementary materials

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Title:

Generation of a novel affibody molecule targeting *Chlamydia trachomatis* MOMP

Authors:

Mingyang Li, Wei Shi, Jia Yang, Haiyan DONG, Jun Chen, Lifang Zhang, Shanli Zhu*

Affiliations:

Institute of Molecular Virology and Immunology, Department of Microbiology and Immunology, School of Basic Medical Sciences, Wenzhou Medical University, Wenzhou 325035, Zhejiang, People’s Republic of China

Running title:

Affibody molecules targeting *Chlamydia trachomatis* MOMP

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Corresponding authors:

*E-mail: sw852@126.com;* tel: +86-577-86689910, Fax: +86-577-86689961
|                | $K_a (1/\text{Ms})$ | $K_d (1/\text{s})$ | $K_D (\text{M})$ |
|----------------|---------------------|-------------------|-----------------|
| $Z_{\text{MOMP}-461}$ | $4.357 \times 10^4$ | $0.03545$         | $8.137 \times 10^{-7}$ |
| $Z_{\text{WT}}$        | $3.584 \times 10^{-2}$ | $0.002495$        | $6.96 \times 10^{-2}$ |

Abbreviations: $K_a$, Association rate constant; $K_d$, Dissociation rate constant; $K_D$, Dissociation equilibrium constant.
Figure S1. SDS-PAGE and Western blot analysis of MOMP fusion protein.

(A) His-tagged MOMP fusion protein in Coomassie blue staining. M, protein ladder; 1. *E.coli* BL21(DE3); 2. *E.coli* BL21(DE3) transformed with pET21a(+) vector; 3. *E.coli* BL21(DE3) transformed with pET21a(+)MOMP without IPTG induction; 4. *E.coli* BL21(DE3) transformed with pET21a(+)MOMP with IPTG induction; 5. Purified His-tagged MOMP. (B) Western blot analysis of MOMP by His-tag mAb. M, protein ladder; 1. *E.coli* BL21(DE3) transformed with pET21a(+)MOMP with IPTG induction; 2. *E.coli* BL21(DE3) transformed with pET21a(+) with IPTG induction.
Figure S2. A representative ELISA screening for target-binding activity of MOMP affibody.

The supernatants containing potential affibody molecules were loaded in microtiter wells, which had been previously coated with fusion MOMP. A total 480 clones from phage library were screened for its interaction with MOMP by an ELISA assay and high signal intensity clones were selected for DNA sequencing.