

## Human Antibodies Against Middle East Respiratory Syndrome Coronavirus

### Summary (1024-character limit)

The National Cancer Institute is seeking statements of capability or interest from parties interested in collaborative research to co-develop antibody-based therapeutic against MERS-CoV, including animal studies, cGMP manufacturing, and clinical trials.

### NIH Reference Number

E-002-2014

### Product Type

- Diagnostics
- Therapeutics

### Keywords

- middle east respiratory syndrome
- MERS
- coronavirus
- antibody

### Collaboration Opportunity

This invention is available for licensing and co-development.

### Contact

- John D. Hewes  
NCI - National Cancer Institute

240-276-5515

[John.Hewes@nih.gov](mailto:John.Hewes@nih.gov)

### Description of Technology

No effective therapeutics or vaccines against Middle East Respiratory Syndrome Coronavirus (MERS-CoV) are available. The human-to-human aspect of transmission and the high mortality rate associated with MERS-CoV infection have raised concerns over the potential for a future MERS-CoV pandemic and emphasized the need for development of effective therapeutics and vaccines.

The MERS-CoV-S protein is believed to be required for binding and virus entry during MERS-CoV infection. The antibodies of this technology represent candidate antibody-based therapeutics for treatment of MERS-CoV infection. Researchers at the NCI have developed human antibodies that target MERS-CoV. Certain of these antibodies bind with epitopes of the MERS-CoV receptor binding domain

(RBD) of MERS-CoV spike (S) protein with high affinity and are capable of neutralizing the virus as demonstrated in a pseudovirus assay.

### **Potential Commercial Applications**

- Antibody-based therapeutics for treatment of MERS-CoV infection

### **Competitive Advantages**

- No vaccine or other biologic therapy is available, and this antibody provides high binding (sub-nanomolar) affinity, and relative safety with long half-lives.

### **Inventor(s)**

Dimiter Dimitrov, Tianlei Ying (NCI), Tina Ju (NCI), Kwok Yuen

### **Development Stage**

- Discovery (Lead Identification)

### **Publications**

Zaki AM, et al. [[PMID 23075143](#)]

Zhu Z, et al. [[PMID 18271743](#)]

Zhu Z, et al. [[PMID 17620608](#)]

### **Patent Status**

- **U.S. Patent Filed:** U.S. Patent Application Number 61/892,750, Filed 18 Oct 2013

### **Therapeutic Area**

- Infectious Diseases