

#538234 An anti-EpCAM x anti-CD3 bispecific antibody, M701, for the treatment of malignant pleural effusion due to NSCLC: a prospective randomized controlled phase II trial

Authors: Z. Song¹, J. Cai², D. Lv³, J. Zhao⁴, T. Yi⁵, Y. Zhao⁶, G. Wang⁷, J. Yao⁸, H. Shi⁹, K. Lei¹⁰, C. Jin¹¹, X. Wang¹², Z. Sheng¹³, Z. Song¹⁴, B. Wang¹⁵, Y. Liu¹⁶, B. Liu¹⁷, B. Yang¹⁸, P. Sun¹⁹, P. Zhou²⁰, S. Huang²⁰, M. Pei²⁰,

1.Phase I Clinical Trial Unit, Zhejiang Cancer Hospital, Hangzhou, China; 2. Department of Oncology, The First Affiliated Hospital of Yangtze University, Jingzhou, China; 3. Department of Respiratory Medicine, Taizhou Hospital of Zhejiang Province, Taizhou, China;4. Department of Oncology, Changzhi People's Hospital, The Affiliated Hospital of Changzhi Medical College, Changzhi, China; 5. Department of Oncology, Xiangyang Central Hospital, Xiangyang, China; 6. Respiratory medicine, Department of Gastrointestinal Oncology, The Affiliated Cancer Hospital of Zhengzhou University & Henan Cancer Hospital, Zhengzhou, China; 7. Department of Oncology, Huangshan People's Hospital, Huangshan, China; 8. Department of Oncology, The First Affiliated Hospital of Henan University of Science & Technology, Luoyang, China; 9. Department of Oncology, First Affiliated Hospital & Clinical Medical College of Gannan Medical University, Ganzhou, China; 10. Department of Oncology, Yibin Second People's Hospital, Yibin, China; 11. Department of Oncology, The First Affiliated Hospital of Xinxiang Medical University, Xinxiang, China; 12. Department of Oncology, Xuzhou Central Hospital, Xuzhou, China; 13. Department of Oncology, The Third Hospital of Changsha, Changsha, China; 14. Department of Medical Oncology, Affiliated Hospital of Hebei University, Baoding, China; 15. Department of Respiratory Medicine, Huzhou Central Hospital, Huzhou, China. 16. Department of Oncology, The Second People's Hospital of Neijiang, Neijiang, China; 17. Department of Respiratory Medicine, Harbin Medical University Cancer Hospital, Harbin, China; 18. Department of Thoracic Medical Oncology II, Hubei Cancer Hospital, Wuhan 430079, China; 19. Department of Oncology, Yantai Yuhuangding Hospital, Yantai, China; 20. Wuhan YZY Biopharma Co. Ltd., Wuhan, China.

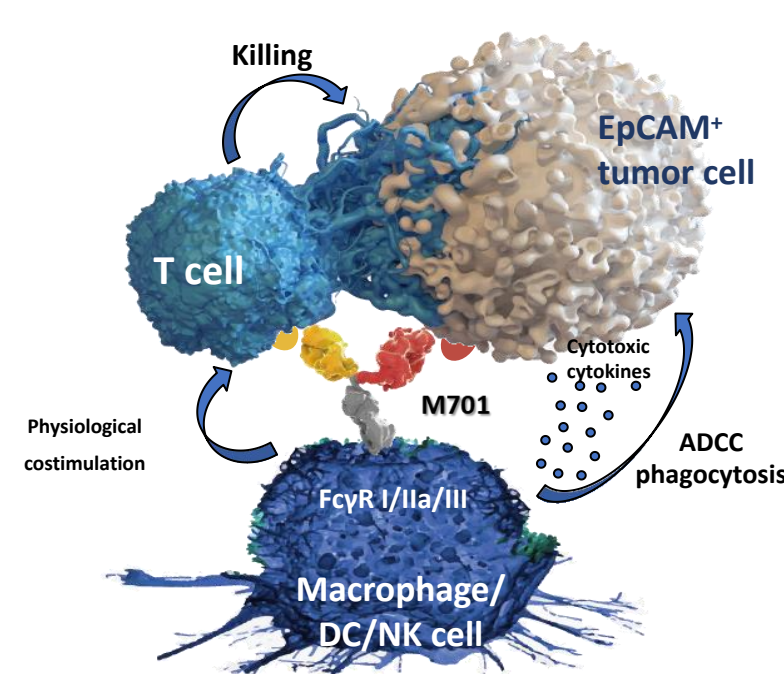
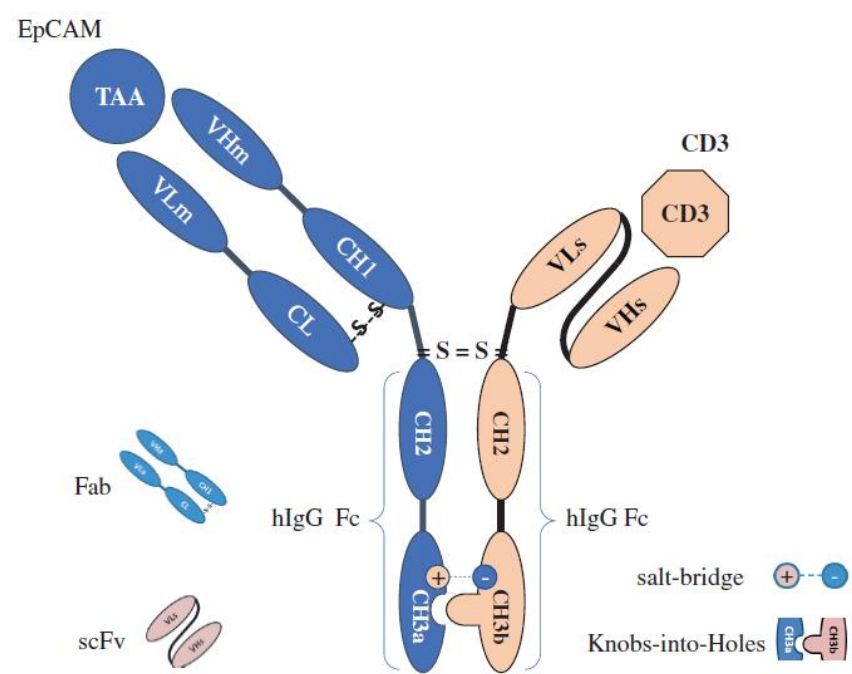


正大天晴
CHIATAI TIANQING

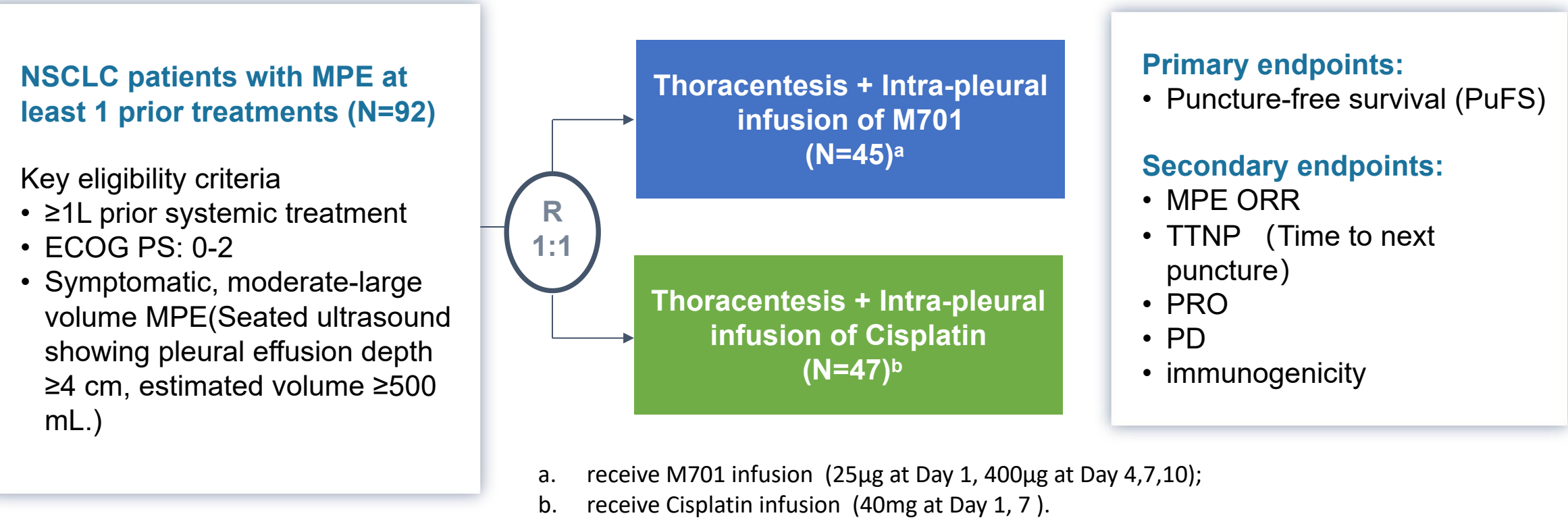
Background:

Malignant Pleural Effusion (MPE) : A significant complication in patients with advanced NSCLC and other epithelial cancers, associated with poor prognosis, reduced quality of life and severe symptoms. In China, local chemotherapy is a common treatment method that can provide non-durable control of MPE.

M701: An anti-EpCAM x CD3 bispecific antibody, engaging the T cells to EpCAM positive tumor cells and activating T cells and other immune cells (Macrophage/DC/NK) to kill the tumor cells. The structure of M701 and MOA were illustrated below:



Study design:



NSCLC patients with symptomatic MPE who had failed in at least 1 line of systemic treatment were enrolled. Enrolled subjects were assigned into 2 arms randomly. M701 arm received intra-pleural(IP) infusion of M701 at doses of 25-400-400-400µg, administered on day 1, 4, 7 and 10. Control arm received IP infusion of Cisplatin at 2 doses of 40mg, on day 1 and 7. Then the catheter were removed at Day 10 after sufficient drainage. All patients received systemic treatment during the study.

The primary endpoint is Puncture-free Survival (PuFS), defined as the survival time from Day 10 to the intolerance of MPE or death, which is a composed time to event endpoint. Secondary endpoints included MPE objective response rate (ORR), Time to next puncture, symptoms and signs related to MPE, pharmacodynamic and immunogenicity.

M701 (Anti-EpCAM x Anti-CD3) Intra-pleural infusion showed great efficacy in MPE!

● M701 infusion showed significant efficacy of preventing the re-accumulation of pleural effusion in driver gene-negative NSCLC patients (mPuFS 176 days vs 42.5 days, HR=0.34) or systemically platinum-pretreated NSCLC patients (mPuFS 178 days vs 53.5 days , HR=0.67).

● In driver gene-negative NSCLC patients, M701 infusion achieved an MPE objective response rate (ORR) of 64.9%, compared with 18.5% in the control group.

● M701 intra-pleural infusion was safe and well tolerated, with fewer ≥Grade 3 TRAEs than the control group (2.2% vs 6.4%).

This study was sponsored by Wuhan YZY Biopharma Co. Ltd.(Wuhan, China) and CHIA TAI Tianqing Pharmaceutical Group Co., Ltd.(Nanjing, China)
Contract Dr. Song for more details of this trial:
songzb@zjcc.org.cn (Dr. Zhengbo Song)
Contact Dr.Zhou for more details of M701:
pfzhou@zyybio.com (Dr. Pengfei Zhou)

Results:

Updated data as of May, 2026.

1) **Baseline:** The FAS characteristics were listed below:

Characteristics	M701 Arm N= 45	Control Arm N= 47
Age (yrs) , Median	66	60
Gender , Female	18 (40.0%)	19 (40.4%)
ECOG (0-1)	43 (95.6%)	46 (97.9%)
Baseline Pleural effusions volume		
<1000 mL	24 (53.3%)	31 (66.0%)
≥1000 mL	21 (46.7%)	16 (34.0%)
Previous thoracentesis history	34 (75.6%)	38 (80.9%)
driver gene mutations-positive (EGFR, ALK, ROS1)	30 (66.6%)	31 (66.0%)
Median prior lines of treatment	2	2

2) **Safety:** M701 and Cisplatin intra-pleural infusion were safe and well tolerated in the subjects (≥Gr 3 TEAE 31.1% VS 29.8%), while the common TRAEs in the M701 arm were anemia (22.2%) and increased lipase (17.8%), while the common TRAEs in the control arm were nausea (17.0%) and vomiting (10.6%).

3) **Efficacy:** The primary endpoint was median PuFS, data showed below. The MPE ORR were 64.9% vs 18.5% in the driver gene-negative NSCLC patients of M701 and Control arms, respectively.

4) **PFS&OS:** The PFS and OS were comparable between the M701 and control arms, both in the full analysis set (FAS) and across subgroups. This suggests that the improved control of MPE was attributable to the local treatment effect of M701.

mPuFS (days)	M701 Arm	Control Arm	HR	P value
FAS (n=45 vs 47)	170	72	0.77	0.299
driver gene negative patients (n=14 vs 16)	176	42.5	0.34	0.010
Systemically platinum-pretreated patients (n=20 vs 23)	178	53.5	0.67	0.201

Future Directions:

This Phase II trial is ongoing and has demonstrated significant potential in preventing the re-accumulation of pleural effusion, particularly in driver gene-negative NSCLC patients, or Systemically platinum-pretreated patients. A pivotal phase III trial is planned for 2026 to validate its efficacy and safety in a large-scale Chinese population.