

A Fully-human Antibody Specifically Targeting a Membrane-bound Fragment of CADM1 Potentiates the T cell-mediated Death of Human Small Cell Lung Cancer Cells

Ji Hyun Lee ¹, Ji Woong Kim ², Ha Rim Yang ¹, Seong-Won Song ³, Song-Jae Lee ³, Yeongha Jeon ³, Anna Ju ³, Narim Lee ³, Min-gu Kim ³, Minjoo Kim ³, Kyusang Hwang ¹, Jin Hwan Yoon ¹, Hyunbo Shim ⁶ and Sukmook Lee ^{1,2,4,5,*}

¹ Department of Biopharmaceutical Chemistry, Kookmin University, Seoul 02707, Republic of Korea; 707jh@kookmin.ac.kr (J.H.L.); 2825760@kookmin.ac.kr (H.R.Y); kyusang@kookmin.ac.kr (K.H); yoonjinhwan8090@kookmin.ac.kr (J.H.Y)

² Department of Chemistry, Kookmin University, Seoul 02707, Republic of Korea; jwk7853@kookmin.ac.kr (J.W.K)

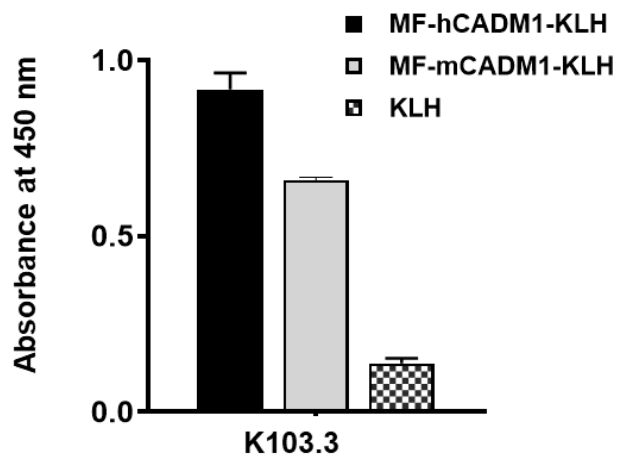
³ R&D Center, CellabMED Inc., 161, Jeongneung-ro, Seongbuk-gu, Seoul, Republic of Korea; swsong@cellabmed.com (S-W.S), sjlee@cellabmed.com (S-J.L), yeongha0820@cellabmed.com (Y.H.J), anna@cellabmed.com (A.N.J), narim.lee@cellabmed.com (N.R.L), alsrn0520@cellabmed.com (M-G.K), delijoo@cellabmed.com (M.J.K)

⁴ Biopharmaceutical Chemistry Major, School of Applied Chemistry, Kookmin University, Seoul 02707, Republic of Korea

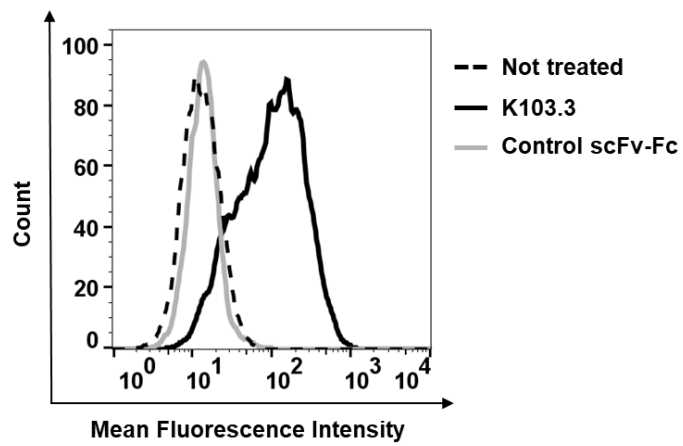
⁵ Antibody Research Institute, Kookmin University, Seoul 02707, Republic of Korea

⁶ Department of Life Science, Ewha Womans University, Seoul 03760, Republic of Korea; hshim@ewha.ac.kr (H.S)

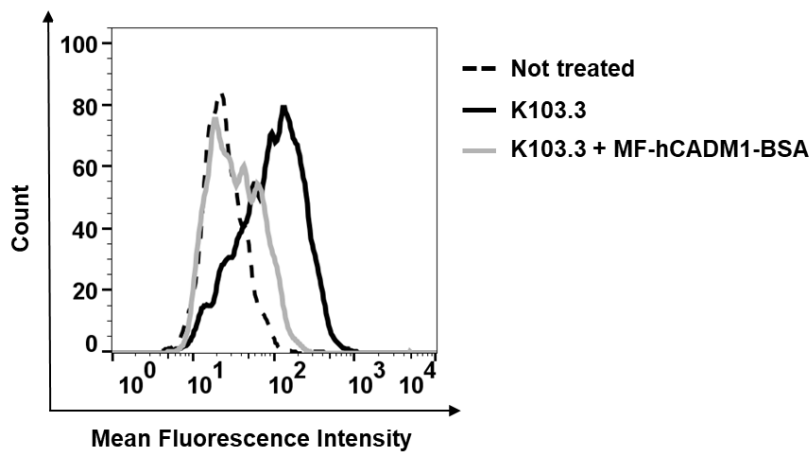
* Correspondence: Lees2018@kookmin.ac.kr; Tel.: +82-2-910-6763



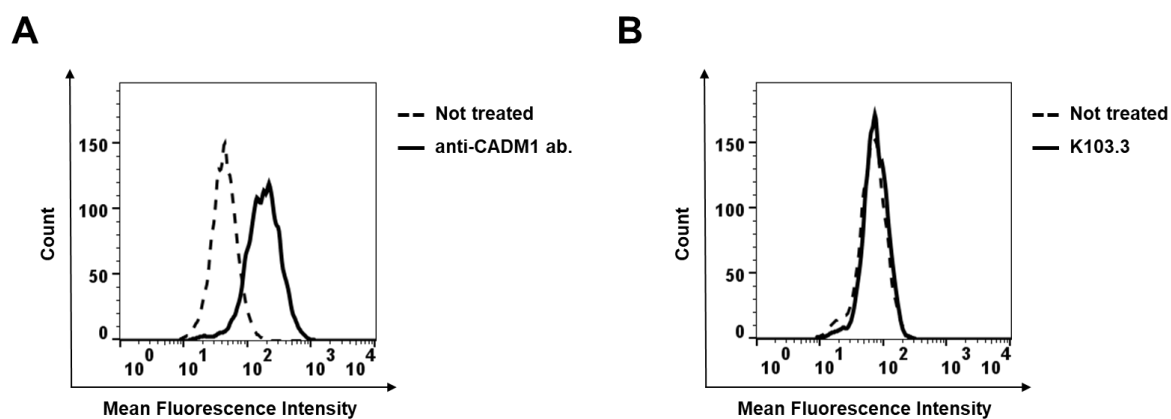
Supplementary Figure S1. ELISA measurement of K103.3 binding to KLH-conjugated human and mouse MF-CADM1. ELISA was performed with MF-hCADM1-KLH or MF-mCADM1-KLH to verify the specific binding of the selected antibody to MF-CADM1. KLH alone was used as a negative control.



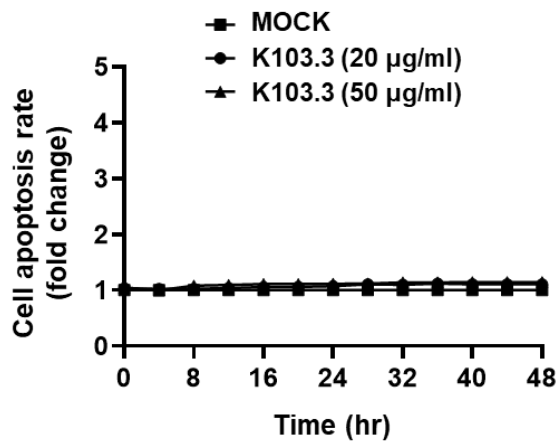
Supplementary Figure S2. Flow cytometry analysis of the selected antibody binding to MF-CADM1 on NCI-H69 cells. Binding of the selected antibody to MF-CADM1 on NCI-H69 cells was investigated in the absence (black dashed line) or presence (black solid line) of K103.3 or control scFv-Fc (gray solid line) using flow cytometry.



Supplementary Figure S3. The specific binding of the selected antibody to MF-CADM1. Binding of the selected antibody to MF-CADM1 on NCI-H69 cells was investigated in the absence (black dashed line) or presence (black solid line) of K103.3, or pre-incubated with MF-hCADM1-BSA (K103.3 + MF-hCADM1-BSA; gray solid line) using flow cytometry.



Supplementary Figure S4. Measurement of CADM1 and MF-CADM1 expression on HUVECs. Expression of CADM1 and MF-CADM1 on HUVECs was investigated in the absence (black dashed line) or presence (black solid line) of (A) commercially available CADM1 antibody and (B) K103.3, an MF-CADM1 specific antibody generated in our laboratory, using flow cytometry.



Supplementary Figure S5. Effect of the selected antibody on Jurkat T cell-mediated HUVEC death. Antibody concentration-dependent HUVEC death by Jurkat T cells in the presence or absence of the K103.3 selected antibody was measured with Annexin V.