Supporting information for

Toxicity of nano molybdenum trioxide toward invasive breast cancer cells

Thao Anh Tran,‡^a Karthikeyan Krishnamoorthy,‡^b Yeon Woo Song,^a

Somi Kim Cho*^a and Sang Jae Kim*^{bc}

^aFaculty of Biotechnology, College of Applied Life Sciences, Jeju National University, Jeju – 690 756, Republic of Korea.

^bNanomaterials and System Laboratory, Department of Mechanical Engineering, Jeju National
University, Jeju – 690 756, Republic of Korea.

^cNanomaterials and System Laboratory, Department of Mechatronics Engineering, Jeju National
University, Jeju – 690 756, Republic of Korea.

AUTHOR INFORMATION

*Corresponding authors.

Email: kimsangj@jejunu.ac.kr (Dr. SJK)

Email: phd.kim.somi@gmail.com (Dr. SKC)

‡ These authors contributed equally.

Isolation of iMCF-7 cells:

Human invasive breast cancer cells iMCF-7 were isolated with CD44^{high}/CD24^{low} marker from normal breast cancer MCF-7, enriched, and characterized in Stem cell laboratory of Vietnam-HCM National University [1]. We performed FACS analysis by incubating cells with antibody CD44 conjugated fluorescence to confirm the high cell surface expression of CD44 in iMCF-7 compare with MCF-7 (Fig S1). The invasive characteristic of iMCF-7 is examined by wound healing assay (Fig S2) and western blot with EMT (Epithelial-Mesenchymal transition) markers, Vimentin, Snail which are reported to regulate cell migration and invasion (Fig S3) [2,3].

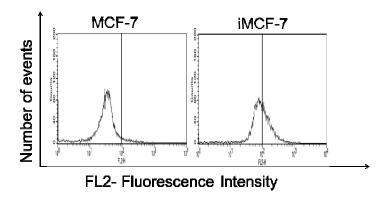


Fig S1. iMCF-7 has high expression level of CD44. The intensity of FL2 fluorescence indicated an increase in CD44 level.

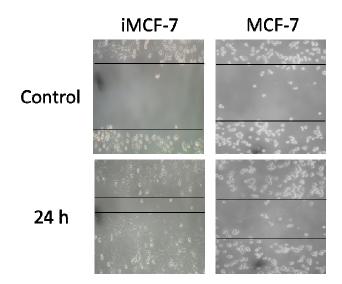


Fig S2. iMCF-7 cells have high migration activity compare with MCF-7. Cell migration was analyzed by wound healing assay.

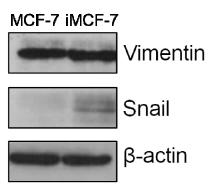


Fig S3. The expression levels of EMT marker proteins in iMCF-7 and MCF-7 examined by western blot analysis.

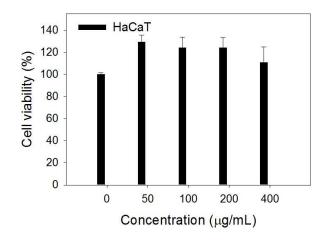


Fig S4. Cytotoxicity of MoO₃ against keratinocyte HaCaT cells.

References:

- Pham, P. V.; Vu, B. T.; Phan, N. L. C.; Duong, T. T.; Vuong, T. G.; Phan, N. K.; Thuy, G. D.; Tran, T. V.; Pham, D. X.; Le M. H. In *Biomedical Tissue Culture*; Luca C. N., Barbara, M., Eds.; Intech: Rijeka, Croatia, 2012; Chapter 4, pp 59-72.
- 2. Toiyama, Y.; Yasuda, H.; Saigusa, S.; Tanaka, K.; Inoue, Y.; Goel, A.; Kusunoki, M. *Carcinogenesis* **2013**, *34*, 2548-2557.
- Mani, S.A.; Guo, W.; Liao, M.J.; Eaton, E.N.; Ayyanan, A.; Zhou, A.Y.; Brooks, M.; Reinhard, F.; Zhang, C.C.; Shipitsin, M.; Campbell, L.L.; Polyak, K.; Brisken, C.; Yang, J.; Weinberg, R.A. Cell 2008, 133, 704-715.