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PII: S0891-5849(17)30712-8  
DOI: <http://dx.doi.org/10.1016/j.freeradbiomed.2017.07.030>  
Reference: FRB13407

To appear in: *Free Radical Biology and Medicine*

Received date: 10 February 2017  
Revised date: 11 July 2017  
Accepted date: 29 July 2017

Cite this article as: Seong-Eun Hong, Jiae Lee, Dong-Hyun Seo, Hye In Lee, Doo Ri Park, Gong-Rak Lee, You-Jin Jo, Narae Kim, Minjung Kwon, Hansen Shon, Eun Kyoung Seo, Han-Sung Kim, Soo Young Lee and Woojin Jeong. Euphorbia factor L1 inhibits osteoclastogenesis by regulating cellular redox status and induces Fas-mediated apoptosis in osteoclast, *Free Radical Biology and Medicine*, <http://dx.doi.org/10.1016/j.freeradbiomed.2017.07.030>

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## **Euphorbia factor L1 inhibits osteoclastogenesis by regulating cellular redox status and induces Fas-mediated apoptosis in osteoclast**

Seong-Eun Hong<sup>1</sup>, Jiae Lee<sup>1</sup>, Dong-Hyun Seo<sup>2</sup>, Hye In Lee<sup>1</sup>, Doo Ri Park<sup>1</sup>, Gong-Rak Lee<sup>1</sup>, You-Jin Jo<sup>1</sup>, Narae Kim<sup>1</sup>, Minjung Kwon<sup>1</sup>, Hansem Shon<sup>1</sup>, Eun Kyoung Seo<sup>3</sup>, Han-Sung Kim<sup>2</sup>, Soo Young Lee<sup>1</sup>, Woojin Jeong<sup>1\*</sup>

<sup>1</sup>Department of Life Science and the Research Center for Cellular Homeostasis, Ewha Womans University, Seoul 120-750, Korea

<sup>2</sup>Department of Biomedical Engineering, College of Health Science, Institute of Medical Engineering, Yonsei University, Wonju, Korea

<sup>3</sup>College of Pharmacy, Ewha Womans University, Seoul 120-750, Korea

\*Correspondence to: Science Building C, Room 211, 11-1 Daehyun-dong, Seodaemun-gu, Seoul 120-750, Korea. Tel: +82 2 3277 4495; fax: +82 2 3277 3760. jeongw@ewha.ac.kr

### **Abstract**

Excessive bone resorption caused by increased osteoclast number or activity leads to a variety of bone diseases including osteoporosis, rheumatoid arthritis and periodontitis. Thus, the therapeutic strategy for these diseases has been focused primarily on the inhibition of osteoclast formation and function. This study shows that euphorbia factor L1 (EFL1), a diterpenoid isolated from *Euphorbia lathyris*, inhibited osteoclastogenesis and induced osteoclast apoptosis. EFL1 suppressed osteoclast formation and bone resorption at both initial and terminal differentiation stages. EFL1 inhibited receptor activator of NF- $\kappa$ B ligand (RANKL)-induced NFATc1 induction with attenuated NF- $\kappa$ B activation and c-Fos

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