

**Interleukin-32 Gamma Stimulates Bone Formation by Increasing miR-29a in Osteoblastic Cells  
and Prevents the Development of Osteoporosis**

Eun-Jin Lee<sup>1</sup>, Sang-Min Kim<sup>1</sup>, Bongkun Choi<sup>1</sup>, Eun-Young Kim<sup>1</sup>, Yeon-Ho Chung<sup>1</sup>, Eun-Ju Lee<sup>2</sup>, Bin Yoo<sup>2</sup>, Chang-Keun Lee<sup>2</sup>, Seokchan Hong<sup>2</sup>, Beom-Jun Kim<sup>3</sup>, Jung-Min Koh<sup>3</sup>, Soo-Hyun Kim<sup>4</sup>, Yong-Gil Kim<sup>2,\*</sup>, and Eun-Ju Chang<sup>1,\*</sup>

<sup>1</sup>Department of Biomedical Sciences, University of Ulsan College of Medicine, Asan Medical Center, Seoul 05505, Korea

<sup>2</sup>Department of Rheumatology, University of Ulsan College of Medicine, Asan Medical Center, Seoul 05505, Korea

<sup>3</sup>Department of Endocrinology and Metabolism, University of Ulsan College of Medicine, Asan Medical Center, Seoul 05505, Republic of Korea

<sup>4</sup>Department of Biomedical Science and Technology, Konkuk University, Seoul 05066, Korea

Running title: Role of IL-32 $\gamma$  in bone metabolism

**\*Corresponding author:** Department of Biomedical Sciences, University of Ulsan College of Medicine, Asan Medical Center, Seoul 05505, Korea. Dr. Eun-Ju Chang (Tel: +82-2-3010-4262; fax: +82-2-3010-4234; email: [ejchang@amc.seoul.kr](mailto:ejchang@amc.seoul.kr)) or Department of Rheumatology, University of Ulsan College of Medicine, Asan Medical Center, Seoul 05505, Korea. Dr. Yong-Gil Kim (Tel: +82-2-3010-3279; fax: +82-2-3010-6969; email: [bestmd2000@amc.seoul.kr](mailto:bestmd2000@amc.seoul.kr))

**Supplementary Figure 1.** Primary osteoblastic cells were transfected with miR-29a and anti-miR-29a for 24 hr. The mRNA level of DKK1 (a) and GAPDH (b) was analyzed by RT-PCR. The protein level of DKK1 (c) and  $\beta$ -actin (d) was evaluated using western blot. GAPDH and  $\beta$ -actin were included as internal controls. The full-length gels and blots are shown as below.

