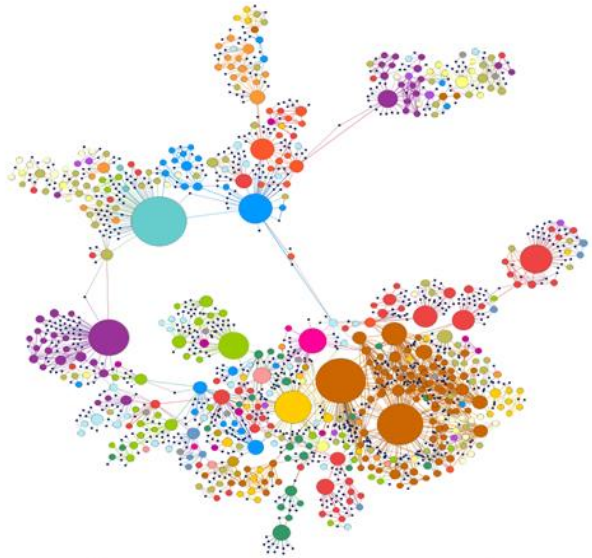




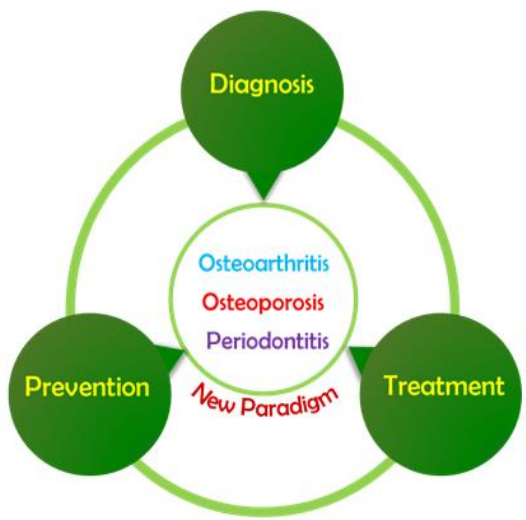
질병네트워크연구실

Human Disease Network Laboratory

Multiple Morbidities and Frailty



The Human Disease Network



Approach with a new perspective that is outside the framework of existing research

Novel Regulators in Disease-Disease Interaction

Searching for new therapeutic targets and drugs for hard-tissue disorders

 LINK Osteoarthritis	 LINK Rheumatoid Arthritis	 cholesterol Interaction Osteoarthritis	 cholesterol Interaction Periodontitis	 CIRCADIAN RHYTHM LINK LINK Periodontitis Osteoarthritis
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Selected Publication

1. Hypoxia-inducible factor-2 α mediates senescence-associated intrinsic mechanisms of age-related bone loss. Lee SY, Park KH, Lee G, Kim SJ, Song WH, Kwon SH, Koh JT, Huh YH, **Ryu JH**. *Exp Mol Med*. 2021 Apr 2.
2. The CH25H-CYP7B1-ROR α axis of cholesterol metabolism regulates osteoarthritis. Choi WS, Lee G, Song WH, Koh JT, Yang J, Kwak JS, Kim HE, Kim SK, Son YO, Nam H, Jin I, Park ZY, Kim J, Park IY, Hong JI, Kim HA, Chun CH, **Ryu JH***, Chun JS*. *Nature*. 2019 Feb 6. (*co-corresponding author)
3. Controlling hypoxia-inducible factor-2a is critical to maintaining bone homeostasis in mice. Lee SY, Park KH, Yu HG, Kook E, Song WH, Lee G, Koh JT, Shin HI, Choi JY, Huh YH, **Ryu JH**. *Bone Research*. 2019 May 13;7:14.
4. NAMPT enzyme activity regulates catabolic gene expression in gingival fibroblasts during periodontitis. Park KH, Kim DK, Huh YH, Lee G, Lee SH, Hong Y, Kim SH, Kook MS, Koh JT, Chun JS, Lee SE, **Ryu JH**. *Exp Mol Med*. 2017 Aug 18;49(8):e368.
5. NAMPT Is an Essential Regulator of RA-Mediated Periodontal Inflammation. Kim D, Lee G, Huh YH, Lee SY, Park KH, Kim S, Kim J, Koh J, **Ryu J**. *J Dent Res*. 2017 Jun;96(6):703-711.
6. HIF-2 α -induced chemokines stimulate motility of fibroblast-like synoviocytes and chondrocytes into the cartilage-pannus interface in experimental rheumatoid arthritis mouse models. Huh YH, Lee G, Lee KB, Koh JT, Chun JS, **Ryu JH**. *Arthritis Res Ther*. 2015 Oct 29;17:302. doi: 10.1186/s13075-015-0816-x.
7. Crosstalk between FLS and chondrocytes is regulated by HIF-2 α -mediated cytokines in arthritis. Huh YH, Lee G, Song WH, Koh JT, **Ryu JH**. *Exp Mol Med*. 2015 Dec 4;47:e197.
8. Hypoxia-inducible factor-2 α is an essential catabolic regulator of inflammatory rheumatoid arthritis. **Ryu JH**, Chae CS, Kwak JS, Oh H, Shin Y, Huh YH, Lee CG, Park YW, Chun CH, Kim YM, Im SH, Chun JS. *PLoS Biol*. 2014 Jun 10;12(6):e1001881.
9. Low-density lipoprotein receptor-related protein 5 governs Wnt-mediated osteoarthritic cartilage destruction. Shin Y, Huh YH, Kim K, Kim S, Park KH, Koh JT, Chun JS, **Ryu JH**. *Arthritis Res Ther*. 2014 Jan 31;16(1):R37.
10. NAMPT (visfatin), a direct target of hypoxia-inducible factor-2 α , is an essential catabolic regulator of osteoarthritis. Yang S*, **Ryu JH***, Oh H, Jeon J, Kwak JS, Kim JH, Kim HA, Chun CH, Chun JS. *Ann Rheum Dis*. 2013 Dec 17. doi: 10.1136/annrheumdis-2013-204355. (*co-first author)
11. Hypoxia-inducible factor-2 α regulates Fas-mediated chondrocyte apoptosis during osteoarthritic cartilage destruction. **Ryu JH**, Shin Y, Huh YH, Yang S, Chun CH, Chun JS. *Cell Death Differ*. 2012 Mar;19(3):440-50.
12. Interleukin-6 plays an essential role in hypoxia-inducible factor 2 α -induced experimental osteoarthritic cartilage destruction in mice. **Ryu JH**, Yang S, Shin Y, Rhee J, Chun CH, Chun JS. *Arthritis Rheum*. 2011 Sep;63(9):2732-43.

Disease-Disease Interaction ; hyperlipidemia & Osteoarthritis



cholesterol

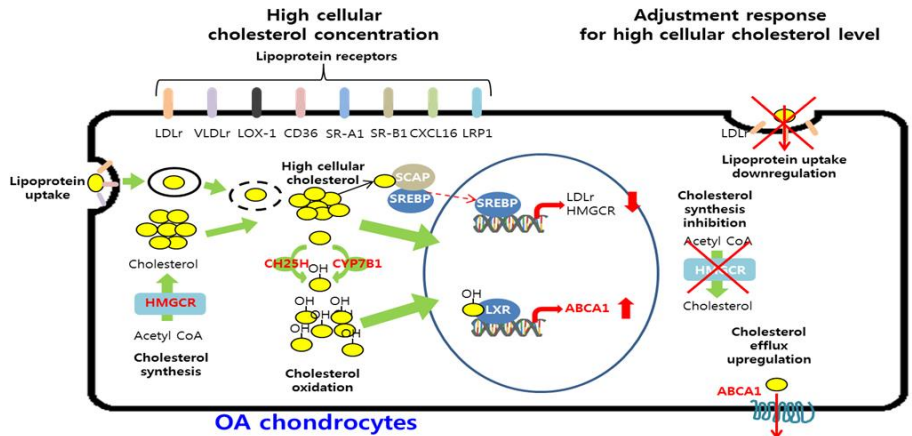
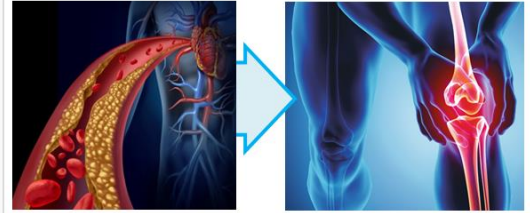
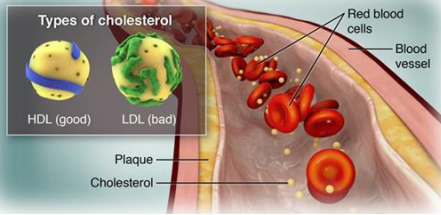
Interaction



Osteoarthritis

<Nature, 2019>

The CH25H-CYP7B1-ROR α axis of cholesterol metabolism regulates osteoarthritis



Hypoxia and Bone Homeostasis

HIF-2 α & Osteoporosis

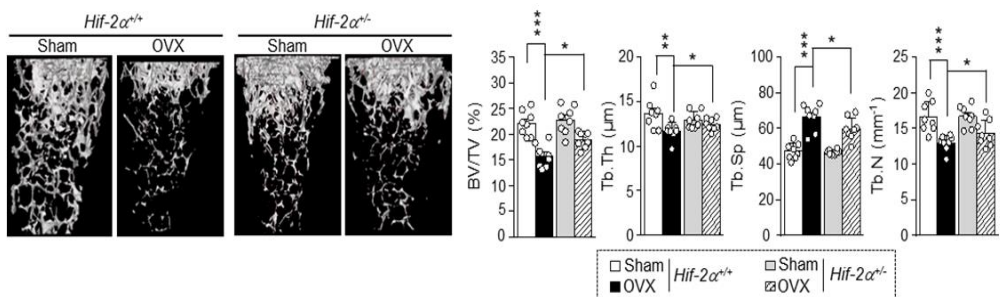
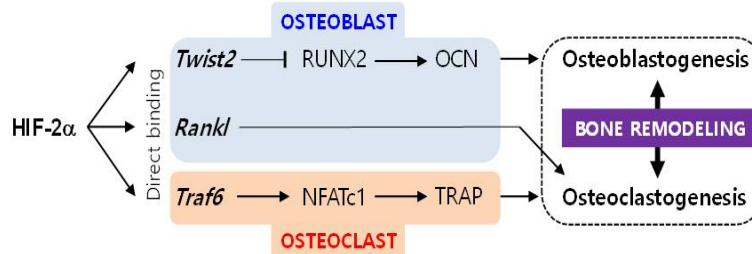
Bone Res. 2019



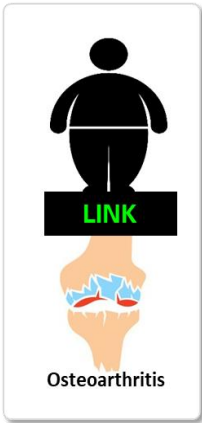
Regulation



OSTEOPOROSIS

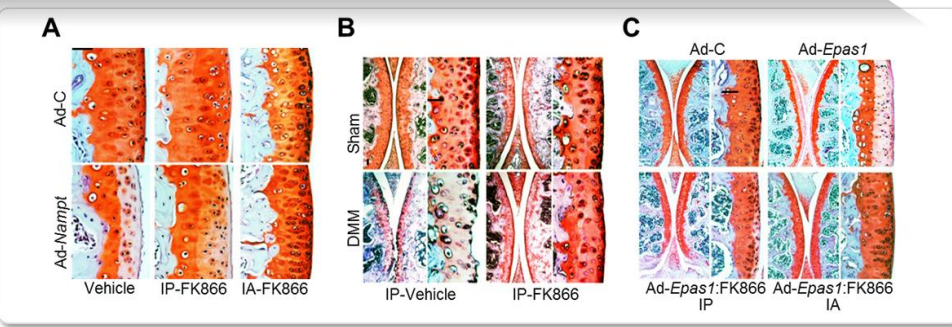


Disease-Disease Interactions



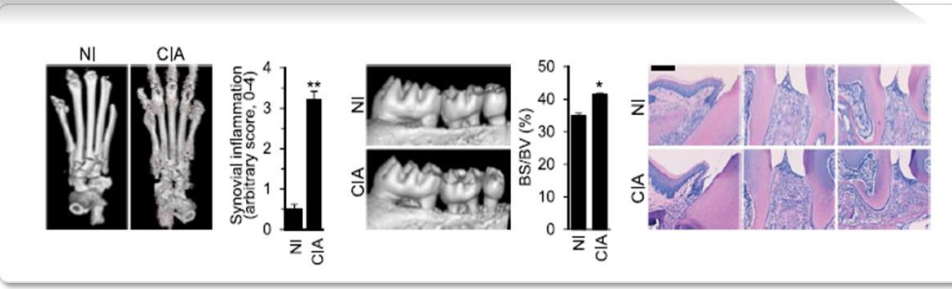
Adipokine (Visfatin; Namp1) & Osteoarthritis

Ann Rheum Dis 2015



Crosstalk between rheumatoid arthritis & periodontitis

J Dent Res 2017, Exp Mol Med 2017



Current Research Projects

