

**[Published in *Nature*] Professor Jang-Soo Chun's joint research team discovers that degenerative osteoarthritis is caused by cholesterol!**

**(Ministry of Science and ICT)**

□ According to the Ministry of Science and ICT, GIST (President Seung Hyeon Moon) Professor Jang-Soo Chun and Chonnam National University Professor Je-Hwang Ryu who received his master's and Ph.D. from GIST's School of Life Sciences have determined that cholesterol \* is the cause of degenerative osteoarthritis \* in joint cartilage.

\* Cholesterol is a type of fat component essential for the maintenance of life, but it can also cause a variety of diseases such as arteriosclerosis and dementia.

\* Osteoarthritis: A disease in which joint cartilage is destroyed, causing inflammation and pain as the cartilage protecting the joint degenerates.

□ The results of this research were published in the February 7, 2019, issue of *Nature*, the world's top scientific journal.

※ Name of paper: The CH25H–CYP7B1–RORα axis of cholesterol metabolism regulates osteoarthritis

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□ Degenerative arthritis is caused by gradual and non-reversible damage to the cartilage between joints and is a typical degenerative disease that lowers the quality of life. However, a clear cause of the disease has not previously been identified, and fundamental prevention and treatment options have not been developed.

□ The researchers found that cholesterol was abnormally high in the degenerative cartilage when compared to normal cartilage, and the increased cholesterol metabolism resulted in a series of processes leading to degenerative arthritis.

□ Professor Jang-Soo Chun and Professor Je-Hwang Ryu said, "The study found that degenerative arthritis is not merely an incidental disease caused by aging, but a metabolic disorder that is actively caused by cholesterol metabolism, like atherosclerosis. This is expected to provide new clues for the prevention and treatment of degenerative arthritis."

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