# Researchers identify a molecule that increases the risk of cardiac insufficiency

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A team of scientists from the Center for Applied Medical Research (CIMA) of the University of Navarra has identified a key enzyme in the development of cardiac insufficiency. This enzyme is involved in the accumulation of fibrous tissues in the hearts of patients with chronic cardiac diseases and deterioration of heart functions.

The research project, published in the journal *Hypertension*, is part of a project of the "Red Europea de Excelencia en Hipertensión y Enfermedades Cardiovasculares" [European Network of Excellence in Hypertension and Cardiovascular Diseases], in which research groups from Belgium, the Netherlands, Italy, Great Britain, France, Germany, Finland and Poland are all participating. The project also forms part of the "Red Española de Investigación de las Enfermedades Cardiovasculares" [Spanish Network for Research on Cardiovascular Diseases].

Today, cardiac insufficiency affects more than 1,250,000 Spanish men and women over the age of 45. More than half of these people have a life expectancy of less than five years. The accumulation of fibrosis in the heart has been proven to have a significant influence on the development of cardiac insufficiency among patients with chronic heart disease.

## New methods for treating patients with heart disease

The research team from the CIMA analyzed the expression of Llysyl oxidase, an enzyme which regulates the amount of fibrous tissue in cardiac muscle. "By means of molecular and histological methods, we have found that the cardiac muscle in patients with cardiac insufficiency contains an excess of this enzyme as well as collagen fiber (which it produces). These factors are associated with the deterioration of cardiac functions," explained Dr. Begoña López, Lead Researcher of the project.

According to the researchers, this project shows that some drugs prescribed for patients with cardiac insufficiency do not actually inhibit the enzyme lysyl oxidase, nor do they reduce fibrosis or improve heart functions. Other drugs however, which are less commonly used, do have these beneficial qualities. "Our work opens new possibilities for treating patients with heart disease through the inhibition of the enzyme. The development of cardiac insufficiency could thus be impeded," said Begoña López.

Source: Elhuyar Fundazioa