

New method in synthesis and development for pharmaceuticals

August 25 2016, by Joo Hyeon Heo



From left are Prof. Cheol-Min Park (School of Natural Science) and his student, Subin Choi. Credit: UNIST

A new research, affiliated with UNIST has been highlighted on the inside front cover of the June issue of the prestigious journal *Chemical Communications*. The key finding of this study is the development of new synthetic methods that facilitate the design and synthesis of bioactive compounds and chemical tools for pharmacological studies, the

team reports.

The study was jointly conducted by Prof. Cheol-Min Park of Department of Chemistry at UNIST, Prof. Nicole S. Y. Loy of School of Physical and Mathematical Sciences at Nanyang Technological University, and two other researchers.

In the study, Prof. Park's team addresses the importance of developing a new simple synthetic method for chemical compounds, as it plays a significant role in drug discovery.

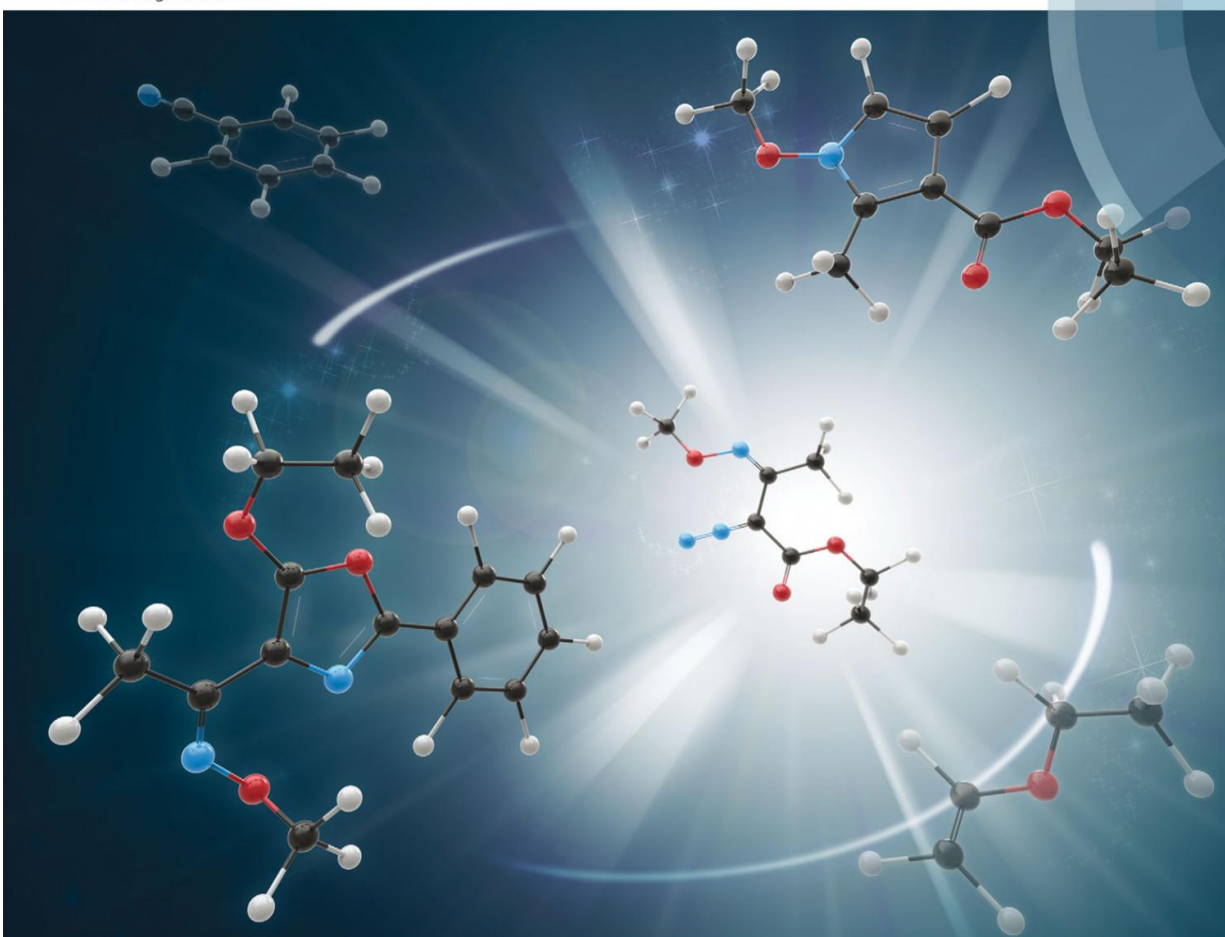
According to the team, "The primary goal of this research, in particular, is to improve the scientific basis for [drug discovery](#) by better understanding the biochemical mechanisms for diseases"

In the study, the formation of an alkyl oxonium ion, which has long been proposed as a key reaction intermediate in alcohol dehydration, is studied by time-resolved fluorescence quenching of a strong photoacid.

Their results revealed, for the first time, that the collaboration of two alcohol molecules through hydrogen bonding is critical to enhancing their reactivity and promotes the resulting alcohol cluster to form an effective Brønsted base when reacting with an acid as strong as sulfuric acid.

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Cheol-Min Park *et al.*
The synthesis of pyrroles and oxazoles based on gold α -imino carbene complexes

175 YEARS

Prof. Prof. Cheol-Min Park (School of Natural Science)'s work has been

selected to appear on the front cover of the prestigious journal, *ChemComm*.
Credit: UNIST

Prof. Park states, "The findings of this research has allowed us to develop the highly efficient synthesis of pyrroles and oxazoles."

The synthesis of pyrroles and oxazoles are also known as bioactive components, the team reports. In fact, pyrroles have been used to treat a number of medical conditions, as they possess a broad spectrum of biological activities, such as antidepressant, anticarcinogenic, and psychoanalytic. Oxazoles also show the following biological activities, such as anti-influenza virus and cytostatic activities.

More information: Nicole S. Y. Loy et al, The synthesis of pyrroles and oxazoles based on gold α -imino carbene complexes, *Chem. Commun.* (2016). DOI: [10.1039/C6CC01742H](https://doi.org/10.1039/C6CC01742H)

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