

New chemical reaction offers opportunities for drug development

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Researchers led by Conway Fellow, Professor Pat Guiry have solved a chemistry problem that has stumped researchers worldwide for more than a decade. The results have earned the group the cover story of the leading scientific journal, *Angewandte Chemie*.

The problem involved a chemical reaction called 'homoallenylation', which provides the building blocks for the advancement of new chemical compounds used in drug discovery and development.

"All previous work on this reaction has mostly led to unsatisfactory mixtures" says Professor Pat Guiry, a synthetic organic chemist and Director of the Centre for Synthesis and [Chemical Biology](#) (CSCB) at the University College Dublin.

"But after 6 years of scientific research into the applications of a series of compounds called 'chiral bis(oxazoline) ligands' which we reported back in 2002, we hit upon reaction conditions, which allowed them to promote homoallenylation in good yield and with 100% selectivity for one of two possible products."

[Chemical reactions](#), which are sufficiently selective, useful and broad in scope, are applied in the large-scale manufacture of pharmaceutical drugs, many of which are made in Ireland. At present, pharmaceutical exports account for over 50% of Ireland's GNP.

"To discover a chemical reaction with this high level of selectivity takes

considerable effort, expertise, time, and, of course, a little luck," says Professor Guiry.

Professor Guiry and his co-workers Dr Vincent Coeffard and Miriam Aylward are funded by Science Foundation Ireland and IRCSET.

Provided by University College Dublin

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