A new 'green' molecule leaves Ca' Foscari for laboratories all over the world

June 8 2016

The 'Perosa-Selva-Noè' reagent. Credit: Andrea Avezzù/Ca' Foscari University

A molecule developed and synthesized at Ca' Foscari University of

Venice has been made available to laboratories all over the world. Named after the Ca' Foscari researchers who discovered it, the "Perosa-Selva-Noè vinylation reagent" molecule is now listed in the Sigma-Aldrich catalogue, the world's leading supplier of R&D chemicals.

The named reagent, or molecule labeled with the names of its discoverers, is the prestigious result of "blue-sky" research carried out by the Green Chemistry group guided by professors Alvise Perosa and Maurizio Selva at the Department of Molecular Sciences and Nanosystems. This is the ambition of every chemist, and not just in terms of academic recognition: in fact, the reagent is now made available for purchase to laboratories worldwide for a range of different applications.

Every aspect of this reagent, from its synthesis to its use, is green. "It was identified during a curiosity-driven study into new methods of synthesizing ionic liquids, a fascinating class of green organic compounds," explains Alvise Perosa, organic chemistry professor at Ca' Foscari. "What makes it so interesting is its reactivity. Our molecule is capable of promoting a well-known organic reaction known as the Wittig vinylation in more environmentally compatible and extremely practical experimental conditions compared to analogous conventional commercial reagents."

Maurizio Selva, Alvise Perosa. Credit: Andrea Avezzù/Ca' Foscari University

The Ca' Foscari group discovered that this particular molecule conceals a number of latent properties that emerge when it comes into contact with target reagents capable of setting off the Wittig reaction. Given that this is one of the most widely diffused reactions in organic synthesis, the scientists involved recognised its huge applicative potential and immediately submitted it to Sigma-Aldrich. Thus fundamental "blue-sky" research encounters applied research: now the molecule produced in the laboratories on the Ca' Foscari campus will be available to laboratories all over the world through the company's online catalogue.

The potential applications of methyltriphenylphosphonium

methylcarbonate – the technical name of this compound – for organic syntheses have been described in a scientific article in the prestigious international journal *ChemSusChem* published by Wiley.

More information: Lisa Cattelan et al. Methyltriphenylphosphonium Methylcarbonate, an All-In-One Wittig Vinylation Reagent, *ChemSusChem* (2015). DOI: 10.1002/cssc.201500935