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Secondary metabolites from *Neosartorya fischeri*

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Neosartorya fischeri is a heat-resistant mold frequently reported to cause spoilage in fruit products [1]. It is a distinct fungal species related to *Aspergillus fumigatus*. Unlike the extensively investigated of the *Aspergillus* genus, there are few researches on the secondary metabolites of *Neosartorya* species [2−8]. From several years ago, we initiated a program of investigating the secondary metabolites of *Neosartorya fischeri*. Several secondary metabolites were isolated from the CHCl3 extract of *Neosartorya fischeri*. The structures of the compounds were established by extensive spectroscopic methods.

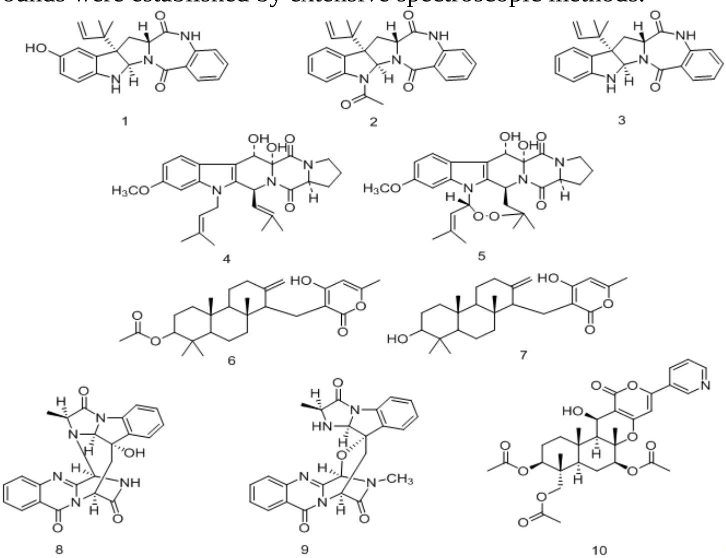

Fig. The structures of secondary metabolites obtained from *Neosartory afischeri*

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A green and environmentally-friendly synthetic method for the production of pyridylaldehydes

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Pyridylaldehydes are important synthetic intermediates with huge market potential due to their widespread application in the fields of medicine, agriculture, perfumery, food additives, dyes as well as others [1–5]. Traditional synthetic routes reported in the literatures include oxidation [6, 7] using pyridine methanol and vinyl pyridine as raw materials, hydrogenation reduction [8, 9] using cyanopyridine and ethyl picolinate as starting materials, and synthesis using picoline as raw material [10–11] including chlorination hydrolysis and liquid phase oxidation. However, the above mentioned methods are suffering from the drawbacks in the need of tough reaction conditions, obtaining the products with low yield that makes the synthesis not cost-efficient, using toxic reagents and reagents that can cause environmental pollution, and as well as others. Therefore, it is meaningful to develop a high-efficient, low-cost and environmentally-friendly synthetic route that can be employed in industry. This report introduces a green synthetic route for the production of an important organic intermediate pyridylaldehydes, namely, the environmental-friendly gas-phase oxidation [12] in a fixed bed which uses double-metal oxidants as catalysts, oxygen as oxidant and water as a solvent, and has the advantages of being high economic and cost efficient, therefore it can be applied in industrial production. The above method is a practice that accords with the concept of green chemistry and also the innovation mode of Industry-University-Research.

The topic of this report is to convey an idea of green chemistry (Fig. 1), which is the focus of attention in today's organic synthesis.