

Radical solution to ‘clip’ addiction

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Accidentally leaving a stainless-steel spatula in an overnight experiment has led to the discovery of a more efficient and environmentally friendly method of producing anti-addiction medications.

In the tradition of Alexander Fleming, who famously discovered penicillin, in a [petri dish](#) which became contaminated while he was on holidays, the team of [chemists](#) from the Monash Institute of [Pharmaceutical Sciences](#) (MIPS), have used the accidental breakthrough to optimise the production of opiate-derived medications used for the treatment of alcohol and [heroin addiction](#).

Professor Peter Scammells, who lead the research, which is funded by ARC Center of Excellence for Free Radical Chemistry and Biotechnology, said the find should translate into lower costs for manufacturers and ultimately for the 46,000 Australians currently prescribed anti-addiction medication.

“It was quite a fortuitous discovery. One night, quite by accident, a member of our group left a stainless steel spatula in her reaction. In the morning we found a high amount of the desired product in the flask. Since then we have been raiding the Institute’s stationery cupboard for cheap stainless steel paper clips!”

Commonly used anti-addiction drugs such as buprenorphine and naltrexone are produced synthetically through a number of steps, starting from the sap of the opiate poppy plant.

The complex manufacturing process means the cost of producing these medications is significant.

Now, the [MIPS](#) team has optimised the problematic step in the process.

“Our new method uses free radical chemistry and common stainless steel resulting in higher opiate yield,” said Professor Scammells.

“It dispenses with the costly, less safe and difficult to work with chemicals used in older methods.”

Professor Scammells said that Australia currently supplies a significant percentage of the world’s medicinal opiate needs.

“We hope that our new method will provide an economic advantage to this important Australian export industry and ‘clip’ the financial and environmental costs of producing anti-addiction medication.”

The group has patented the new procedure. The research was recently published in the Royal Society of Chemistry’s journal *Organic Biomolecular Chemistry*.

Provided by Monash University

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