



Potential new hay fever treatment

Hay fever (allergic rhinitis) season is over but it does not mean scientists are out of puff when it comes to finding a cure for it.

A common anti-inflammatory drug already in use around the world could have an extra benefit as a powerful new treatment for hay fever with fewer side effects than medications currently available, according to a new study published this week.

The results of a preclinical study published in peer-reviewed journal *Immunity, Inflammation and Disease* found that pentosan polysulfate sodium (PPS) was equal or superior to market-leading steroid-based nasal spray Rhinocort Aqua at reducing the symptoms of hay fever.

The study comes as Melbourne biotech company Paradigm Biopharmaceuticals waits for the results of a Phase 2 clinical trial of PPS on human hay fever patients, due next month. The final participant in that trial was treated in Sweden in late March.

Paradigm Biopharma chief executive officer Paul Rennie said the study showed the company's PPS-based nasal spray Rhinosul had the potential to be a blockbuster hay fever treatment around the world, providing more relief and fewer side effects to hay fever sufferers.

"The current market for allergic rhinitis treatments is about US\$11 billion, but it is dominated by antihistamines and corticosteroids, and market surveys have highlighted patient dissatisfaction with this—hence the need for a new, effective therapy," Mr Rennie said.

"Rhinosul has both histamine-stabilising and anti-inflammatory properties in one pharmaceutical product,

without the known side effects of antihistamines and steroids. Its novelty is its dual action."

The lead author of the *Immunity, Inflammation and Disease* publication, Professor Erjefält from Lunds University, Sweden, said: "The clinical formulation of the corticosteroid budesonide (Rhinocort Aqua) was used as a reference drug. Across the efficacy parameters, PPS and budesonide displayed similar anti-inflammatory profiles.

"Despite the multiple targets that PPS binds, the therapeutic effects are broad immuno-modulation rather than the immuno-suppression observed for corticosteroids.

"This means that the side effects encountered with steroidal medication would not be experienced with PPS-based treatments."

PPS has both anti-coagulative and anti-inflammatory effects and has been in use since the 1940s to prevent the formation of platelets during pre-operative procedures as well as to treat bladder pain.

Paradigm Biopharma is testing new uses for the drug, including to treat Ross River fever and hay fever.

The study made note of the drug's long-established safety record, saying that the standing clinical use of PPS as an oral formulation as well as an injectible without reports of immuno-suppressive side effects "attest to the safety of PPS as an anti-inflammatory agent".

The publication, titled *Broad Th2 neutralisation and anti-inflammatory action of pentosan polysulfate sodium in experimental allergic rhinitis*, can be found on the Paradigm Biopharma website.