



Adelaide, Australia, 21 May 2019 – Gamma-PN™ boosts the immune systems' response to flu vaccination

GPN Vaccines' serotype-independent pneumococcal vaccine, Gamma-PN™ has been found to boost the immune systems' response to flu vaccination when it is given at the same time as an influenza vaccine. Gamma-PN™'s ability to do this appears to be due to the direct physical binding of influenza virus to the pneumococcus, which is likely to aid uptake of the flu vaccine by immune cells and thereby enhance antigen presentation to the immune system.

These discoveries were published¹ in today's issue of the prestigious journal, *Nature Microbiology*, and were made by Dr Shannon David working in the University of Adelaide's *Research Centre for Infectious Diseases* led by Dr Mohammed Alsharifi and Professor James Paton.

It is well known that an influenza infection predisposes individuals to severe pneumococcal pneumonia, and most individuals are colonised with pneumococcal bacteria in their nasopharynx. Influenza infection allows the bacteria to readily enter the lung, causing severe bacterial disease.

Combining both influenza and pneumococcal vaccines into a single vaccine that simultaneously combats influenza and the pneumococcus would help to combat two of world's most important respiratory pathogens.

Dr Alsharifi said: "Our findings challenge an age-old immunological dogma about mixing viral and bacterial vaccines in a single injection and comes on top of our discovery published last year that there is a boost in efficacy of GPN Vaccine's whole cell pneumococcal vaccine when it is co-administered with a flu vaccine, so there is bi-directional enhancement of pathogen-specific immunity.

Prof Paton said: "Flu virus and pneumococcus synergised to cause up to 100 million deaths during the great flu pandemic of 1918-1919. A century later, we have shown analogous, but this time protective synergy, with our vaccination strategy that targets both pathogens simultaneously."

About GPN Vaccines

GPN Vaccines is a private biotechnology company developing a vaccine against *Streptococcus pneumoniae*, which is responsible for causing life-threatening pneumonia, bacteraemia and meningitis, as well as otitis media (middle ear infections). Each year it causes 1-2 million deaths worldwide, killing more children than AIDS, malaria and tuberculosis combined. There are now 98 different serotypes of *S. pneumoniae* and the best vaccine currently on the market only protects against 13 of them. Gamma-PN™ – GPN Vaccines' new *S. pneumoniae* vaccine is being developed to protect children and adults against all *S. pneumoniae* strains, regardless of strain serotype.

www.gpnvaccines.com

¹David, SC et al (2019) Direct interaction of whole-inactivated influenza A and pneumococcal vaccines enhances influenza-specific immunity. *Nature Microbiology*; <https://doi.org/10.1038/s41564-019-0443-4>

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