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Australia discovers new treatments for infectious diseases

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Spleen function discovery could lead to better treatments for infectious diseases

Researchers at the Peter Doherty Institute for Infection and Immunity (Doherty Institute) in Australia have discovered a new gene that plays an important role in the way the spleen functions, potentially leading to new treatments for infectious diseases.

The study, published in Science Immunology, also uncovered multiple new spleen cells and revealed the distinct way they respond in order to fight off different infections.

The spleen plays a key role in the immune responses that protect the body against various diseases and infections such as virus infections, malaria and sepsis, and also plays a key role in the immune response to vaccines. However, it has not been known how the spleen functions to support this response.

While it is known the spleen is made up of various networks of cells called fibroblasts, a clear picture of how these cells are constructed and function, is lacking.

“Using novel biological tools and next generation sequencing, we were able to examine precisely how specialised types of fibroblast cells dictate how the spleen works to protect against infections,” researchers explained. “We performed next-generation sequencing to understand what genes are expressed by fibroblasts in the spleen. We used advanced fluorescent microscopy to visualise the 3D networks of cells in the spleen."