The ILC2s appear to be aiding the recruitment of other cells, acting as a “conductor” of the immune response. The messenger proteins produced by ILC2s are certainly not unique. They are produced by a wide range of cells within the body, often cells which are much more populous and whose biology is more widely understood. Deciphering whether ILC2s are indeed the source of high concentrations of messenger proteins in a particular scenario is one of the barriers for wide acceptance for this cell’s role. Researchers must justify why such a rare cell has such a significant effect within the body; much in the same way a small vocal group of people may have their opinions heard over a silent majority.

They’ve got a dark side too…

So far ILC2s appear to be a force for good within our immune response. But our immune system is not that simple. ILC2s have also been implicated in several instances of allergic disease, namely those of the lung, the skin and within our digestive tract. This is when an over active immune response actually starts to cause damage to our own body.

“ILC2s have also been implicated in several instances of allergic disease, namely those of the lung, the skin and within our digestive tract”

A therapeutic target?

Understanding the role of ILC2s in Asthma is of particular interest, as they may hold the answer to long-standing mystery of asthma exacerbations. Asthma exacerbations can be very serious and lead to severe illness and hospitalisation. The most common cause of an exacerbation is through a viral infection. How the virus causes such an impact is not fully understood. It is possible that ILC2s are responding inappropriately to one of the many damage signals put out following an infection (such as interleukin-25 or interleukin-33) resulting in an imbalance of messenger proteins, which can cause damage to the body. Once the biology of asthma exacerbations is fully understood it may provide opportunities for therapeutic targets and potential new treatments could be trialled. Specifically, nullifying the effects of various messenger proteins has already been the subject of several pharmaceutical clinical trials, resulting in several licensed drugs available for use.

“ILC2s provide a mechanistic link between the virus and the symptoms of exacerbations it will illuminate potential avenues for treatments”