

Breakthrough in understanding immune response

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(Medical Xpress)—A team of researchers led by Professor Mark Lindsay from our Department of Pharmacy & Pharmacology has made a breakthrough in identifying the genes that regulate the immune response.

The [immune response](#) is how the body recognises and defends itself against micro-organisms it sees as a threat. Under normal conditions, the immune response is switched off once the threat has passed. However, this does not always happen. This can lead to conditions such as asthma, diabetes and cancer as well as autoimmune, cardiovascular and respiratory diseases.

For this reason, scientists have spent many years trying to understand the mechanism that controls the immune response. Using the latest DNA sequencing technology the team from the Universities of Bath, Oxford, Imperial, Liverpool and Manchester, has discovered a family of genes that do this called long non-coding RNAs – a chemical structure similar to DNA.

Professor Lindsay said: "Advances in DNA sequencing and computing technologies now allow us to identify novel mechanisms that regulate the immune response. Our discovery has the potential to provide a new approach to treating many diseases."

More information: "Long non-coding RNAs and enhancer RNAs regulate the lipopolysaccharide-induced inflammatory response in human monocytes." Nicholas E. Ilott, et al. *Nature Communications* 5,

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