

News & Comments

New Immunological Pathways Discovered in Birds

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New research suggests that viruses are targeting a chicken immune pathway in a new way. Birds' immune responses to zoonotic viruses may vary from humans, according to the discovery, which has implications for diseases that affect other birds.

The study will improve our understanding of birds as prospective reservoirs of human pathogens and help us make better vaccines for poultry once we better understand the immunity pathway.

Unlike humans, birds do not have a protein referred to as ISG15 in their cells. A protein observed in mammals and other non-bird reptiles called ISG15 aids the immune system in responding effectively to viral infections. ISG15 regulates many antiviral responses and serves as a messenger molecule. A bird's immune system is boosted by OASL proteins that help suppress viral infections. It was Pegan's team that focused on the immune system of chickens.

They discovered a sequence motif of amino acids within the ubiquitin-like domain of avian OASLs, namely LRLRGG. To stimulate certain host antiviral pathways, OASL attaches to other host proteins through its motif.

Our understanding of chicken immunity has been expanded. This pathway appears to be evolutionarily geared toward interference by viruses. As a result, we can develop vaccines and treatments that optimize the triggers of this pathway to assist chickens in warding off disease. This pathway can also be enhanced by animal husbandry programs to produce disease-resistant poultry.

KEYWORDS

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