

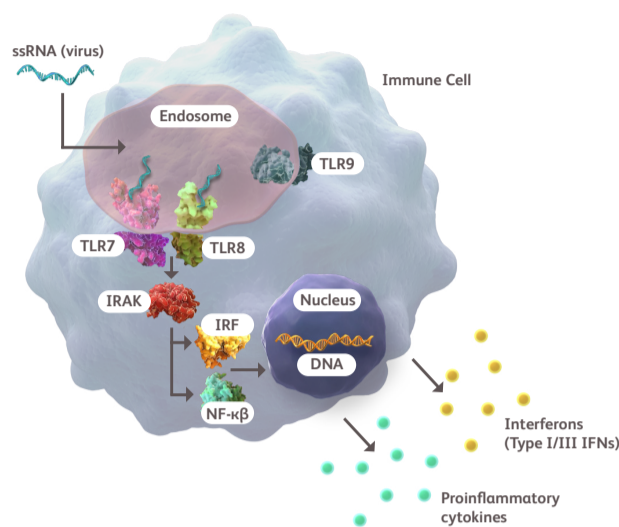
# Toll-Like Receptors (TLR) 7 and 8 Immune Pathway

## About TLR 7/8

A healthy immune response to pathogens plays a key role in protection from infection.

Toll-like receptors (TLR) 7 and 8 help detect the presence of certain pathogens in the body and help initiate and amplify both innate (nonspecific) and adaptive (specialized or specific) immune responses.<sup>1,2</sup>

These receptors in immune cells normally recognize single-stranded RNA (ssRNA) from pathogens (such as certain viruses) and activate various immune cells, resulting in an immune response.<sup>1,2</sup>



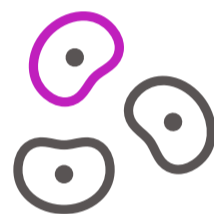
## TLR 7/8 and Inflammatory Diseases



An **uncontrolled or misdirected immune response** by the body can contribute to the damage of otherwise healthy cells, resulting in immune-mediated diseases.



**Overactivation of TLR7/8** contributes to inflammation that occurs in immune-mediated diseases.<sup>1,3</sup>



TLR7/8 can become overstimulated when the receptors recognize and are **activated by ssRNA released by damaged tissue**.<sup>1,3</sup>

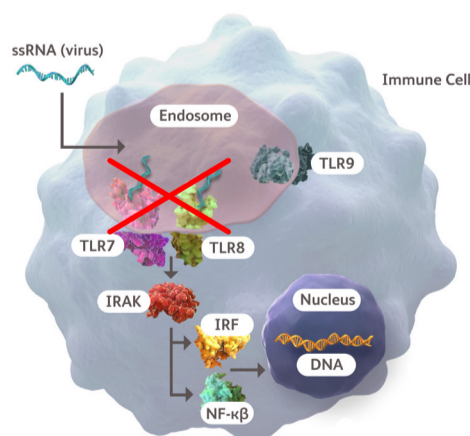
Certain immune-mediated diseases, such as systemic lupus erythematosus, are associated with **defects in the body's ability to eliminate cell debris from tissue damage**, which can activate TLR7/8 and further contribute to the disease.<sup>4</sup>

TLR7 gain-of-function genetic variations may also be a driver for systemic lupus erythematosus.<sup>5</sup>

## Research Implications

Researchers are investigating potential ways to prevent the activation of the TLR7/8 pathway by blocking the receptors with small molecule inhibitors.<sup>6,7</sup>

This inhibition may help in the treatment of a range of immune-mediated diseases, such as lupus and other rheumatic diseases.<sup>7</sup>



At Bristol Myers Squibb, our investigation of immune pathways and receptors like TLR7/8 helps to deepen our understanding of disease and causal human biology and further our efforts to deliver meaningful solutions to patients with immune-mediated diseases.

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