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## Explain It: B Cell

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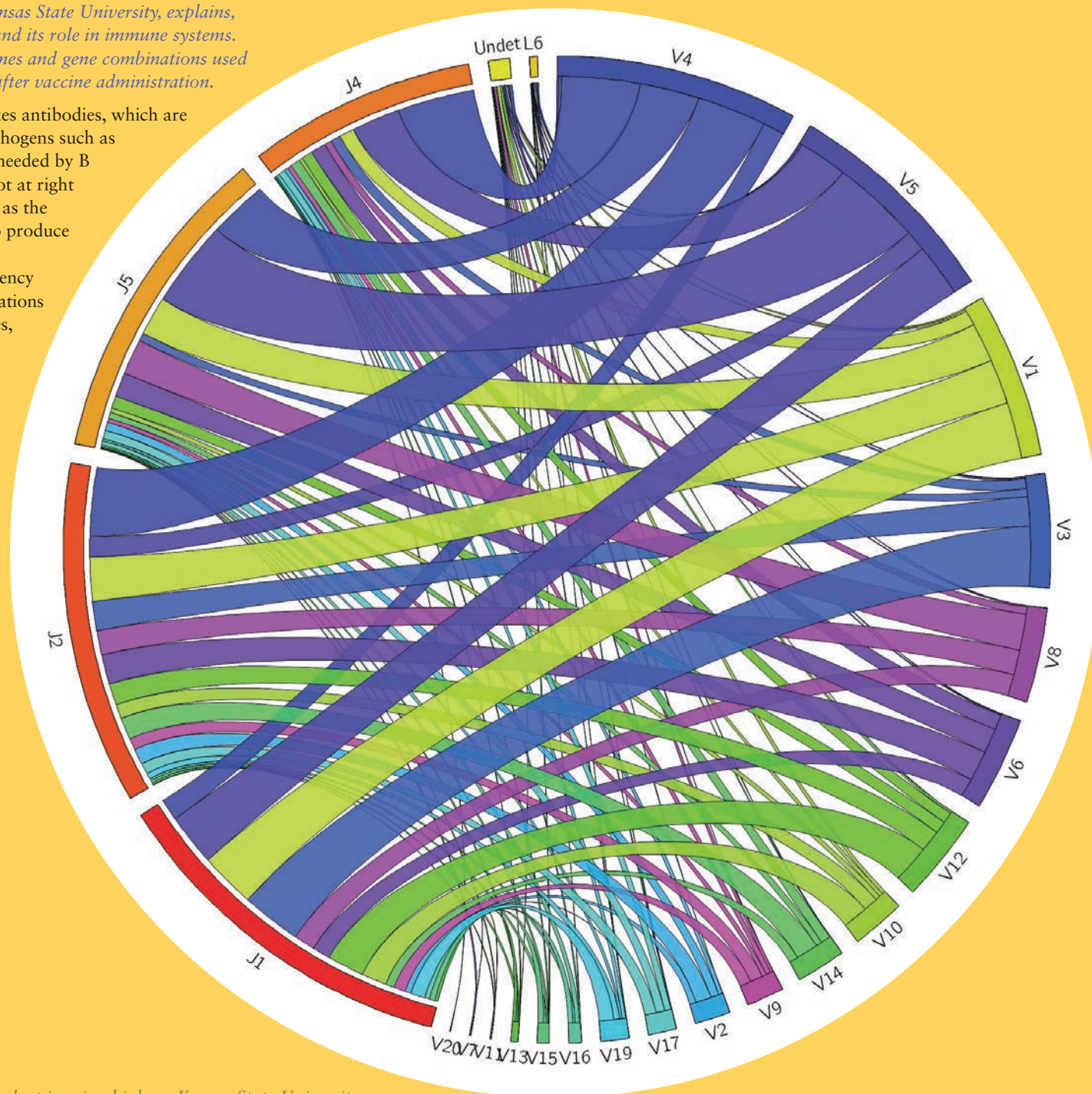
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# B cell

bē 'sel

*Stephen K. Chapes, professor of biology and interim director of the Johnson Cancer Research Center at Kansas State University, explains, in around 100 words, what a B cell is and its role in immune systems. Chapes' lab wants to know how the genes and gene combinations used by a B cell to make antibodies change after vaccine administration.*

A type of white blood cell, a B cell makes antibodies, which are used by the immune system to fight pathogens such as bacteria and viruses. Several genes are needed by B cells to make antibodies. The Circos plot at right shows how often a gene is used as well as the combination of genes used by B cells to produce antibodies. The arc size on the circle's circumference correlates with the frequency of the gene's use, while the gene combinations are shown by lines drawn between genes, with size representing frequency of the combination. These combinations determine to what pathogens an antibody will bind.



*Circos plot by Tricia Rettig, doctoral student in microbiology, Kansas State University.*