Cre-Lox recombination is known as a site-specific recombinase technology, and is widely used to carry out modification at specific sites in the DNA of cells. The system consists of an enzyme, Cre recombinase, that recombines a pair of short target sequences, the lox sites. The Cre-Lox system can be used to activate or repress a gene depending on the placement of the lox sites. Placing the Cre recombinase under the control of a cell-specific promoter allows expression only in specific cells or cellular subsets, thus providing a powerful tool for analysis of gene function at specific developmental or physiological niches. Nowadays almost every aspect of T cell biology can be approached by a specific Cre model. This powerful tool allows scientists to overcome the limitations of gene-deficient animals and target a gene of interest specifically in T cell or T cell subsets by appropriate placement of the lox sites. Here we describe the main Cre lines that enable gene targeting in T helper cells or CD4 T cell subsets, and the most common methods of assessing the recombination efficiency.
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