

From Thymus

**Naive CD8+ T Cell**

**States:**  
CCR7 Expression: 0-100 (determiens localization into LN)

**Naive CD4+ T-Cell**

**States:**  
CCR7 Expression: 0 - 100 (Determines localization into LN)

Via Lymphatics

**Naive CD8+ T Cell**

**States:**  
CCR7 Expression: 0-100 (determiens localization into LN)

**Naive CD4+ T-Cell**

**States:**  
CCR7 Expression: 0 - 100 (Determines localization into LN)

**Macrophages**

**States:**  
MHC I Expression: 0, endogenous antigen-bound  
MHC II Expression: 0, exogenous antigen-bound  
Likelihood of Cross Presentation: 0 - 1

**Dendritic Cell**

**States:**  
MHC I Expression: 0, endogenous antigen-bound  
MHC II Expression: 0, exogenous antigen-bound  
CCR7-expression: Dictates localization to LN  
Likelihood of Cross Presentation: 0 - 1

Via Lymphatics

Site of Infection

**Activated CD8+ T Cell**

**States:**  
Level of Co-stimulation: 0 - 100  
Rate of proliferation: 0 - 100  
IL-2 release rate: Integer  
IL-2 Sensitivity: Integer

**Activated CD4+ T Cell (Th0)**

**States:**  
Level of Co-stimulation: 0 - 100  
Rate of Proliferaton: 0 - 100

**Tfh Cell**

**Activated B-Cells**

**States**  
MHC I Expression: 0, endogenous antigen-bound  
MHC II Expression: 0, exogenous antigen-bound  
Likelihood of Cross Presentation: 0 - 1

LN Paracortex

**Effector CD8+ T Cell**

**Output:**  
IFN-gamma  
IL-3  
GM-CSF  
TNF-a  
TNF-b

**Th1 Cell**

**Output:**  
IL4

**Th2 Cell**

Travels to paracortex/follicle border

Stays in LN Paracortex

LN Follicle

Travels to site of infection

Travels to site of infection

Travels to site of infection