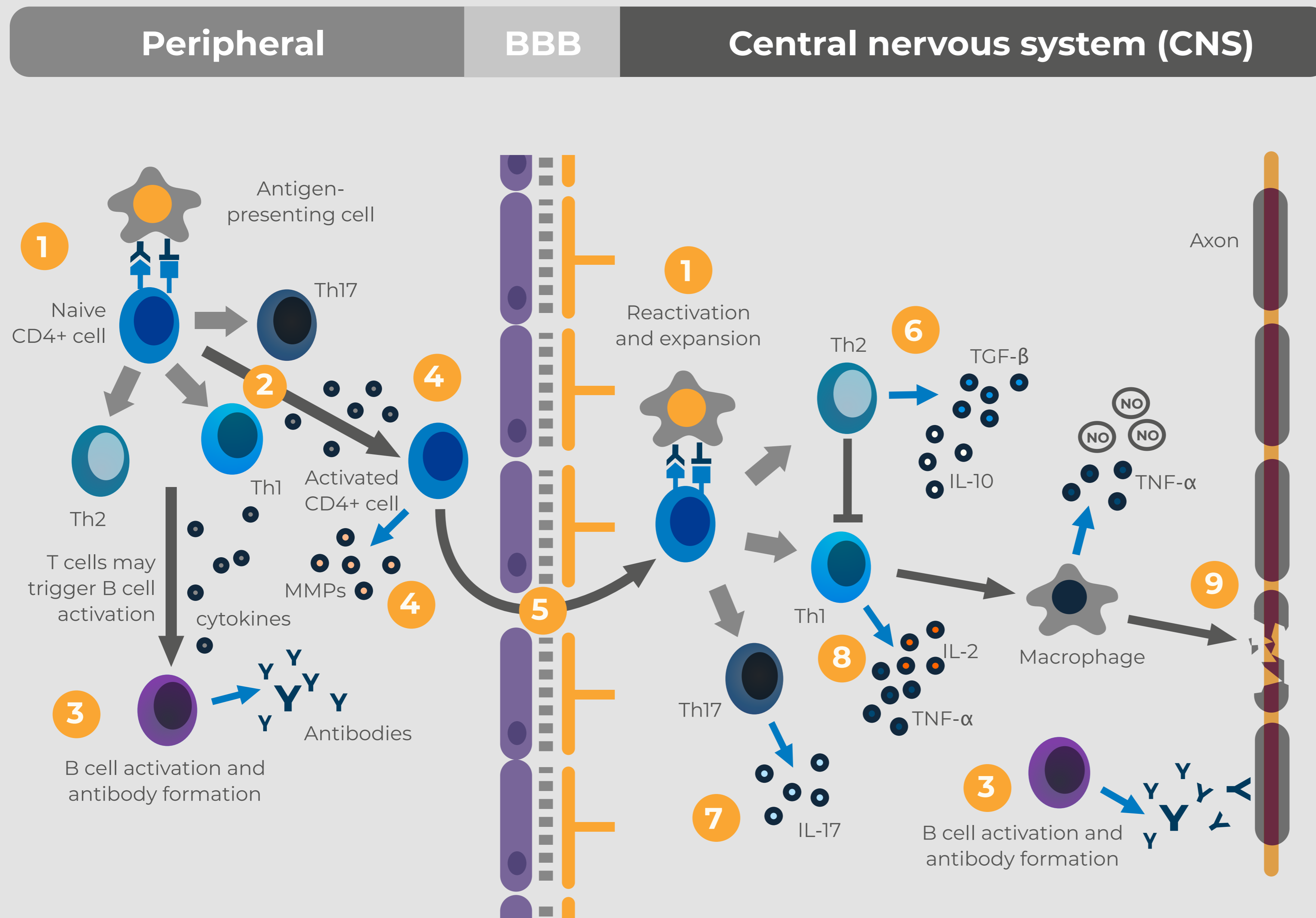


Targets of interferon beta in MS:^{1,2} Its exact mechanisms remain uncertain



Interferon beta (1,2)

1 decreases the expression of MHC class II molecules on antigen-presenting cells and the ability of antigen-presenting cells to stimulate T cell responses

2 decreases T cell activation

3 decreases B cell proliferation

4 prevents adhesion of T cells to the BBB by
a) decreasing serum levels of adhesion molecules
b) suppresses the expression of adhesion molecule VLA-4 ("very late antigen-4") on T-cell surface
c) suppresses the secretion of matrix metalloproteinases such as MMP-9 and restores the ratio of MMP-9 and metalloproteinase-1 (TIMP-1). The tissue inhibitor of TIMP-1 is the main inhibitor of MMP-9.

5 prevents crossing of the BBB

6 promotes anti-inflammatory cytokine production such as IL-10 and TGF-β

7 decreases pro-inflammatory IL-17 secretion by Th17 cells

8 decreases Th1 cytokine release

9 decreases bystander damage

1. Kasper L and Reder A, Ann Clin Transl Neurol 2014; 1(8): 622-631. 2. Madsen C, Brain Behav 2017;7(6):e00696. doi: 10.1002/brb3.696.
NO = nitric oxide; **IL**= interleukin; **TNF-α** = tumor necrosis factor α; **TGF-β** = transforming growth factor β