The Effect of a Pro-inflammatory Milieu on Tregalizumab (BT-061)-Induced Regulatory T-cell Activity

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Abstract

Regulatory T cells (Tregs) are essential for maintaining normal immune homeostasis. We have previously reported that tregalizumab is a humanized, non-depleting, CD4 agonistic antibody that selectively activates Treg cells. Tregalizumab activity is dependent on the recognition of a unique epitope on donor CD2 of CD4 that is not recognized by classical anti-CD4 monoclonal antibodies. Here we provide evidence for the treatment of rheumatoid arthritis (RA).

Recent data have shown that pro-inflammatory cytokines may have a profound negative impact on the ability of tregalizumab to activate Tregs. We hypothesized that changes in the cytokine milieu could influence Tregalizumab activity.

Methods

Pro-inflammatory cytokines (IL-1ß, IL-6) were isolated from whole blood and co-cultured in the presence of either donor or recipient T cells. Effect of cytokines on the ability of tregalizumab to activate Tregs was determined by measuring Treg activity by proliferation and cytokine production.

Results

In this in vitro study, activation of Tregs by tregalizumab and the suppression of T effector cells were not significantly affected by the presence of IL-1ß or IL-6. These results suggest that pro-inflammatory cytokines may not affect Tregalizumab activity.

Conclusions

Our data indicate that Tregalizumab activity is not significantly affected by pro-inflammatory cytokines. This suggests that Tregalizumab is a potential treatment option for patients with RA. Further studies are needed to determine the clinical impact of these findings.

References


Keywords: Tregalizumab, RA, IL-1ß, IL-6, Tregs, Tregalizumab activity, cytokine milieu.