6 Conclusions

In this study it was shown that CCR2 is an important molecule for the control of $CD8^+$ T cell migration to the gut and liver, subsequent induction of histopathological damage in these organs and induction of overall GVHD morbidity and mortality. Other *in vitro* functionally redundant chemokine receptors were not able to fully substitute CCR2 *in vivo*. However, CCR2 was not required for T cell functions other than migration, and most importantly, GVT activity of $CCR2^{-/-}$ $CD8^+$ T cells was not reduced.

Although chemokine receptor antagonism as a new therapeutic paradigm in inflammatory diseases still awaits the final proof in humans, it is tempting to speculate that blockade of CCR2 might be an effective strategy in GVHD prophylaxis and treatment. Possibly, CCR2 antagonists may not cause the global immunosuppression associated with current methods of GVHD therapy and may therefore not lead to infectious complications and reduced GVT activity. However, the exact mechanisms of T cell migration in the complex biological process of GVHD are not completely understood and await further investigation prior to clinical trials.