Retrovirology

Poster presentation

P11-07. Characterization of a new TZM-bl cell line that expresses human FcαR(CD89)

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Background

IgA plays a protective role at mucosal surfaces by facilitating the binding of IgA-coated targets to Fc receptors (FcαR) on effector cells. Human monocytes, macrophages, neutrophils and some dendritic cells express cell surface FcαR that mediates effector functions such as phagocytosis, Ab-dependent cell cytotoxicity and inflammatory mediator release. Moreover, we recently demonstrated that certain IgG Fc receptors expressed on TZM-bl cells augment the neutralizing activity of gp41 MPER-specific Abs.

Methods

To gain insight in the role of CD89 in HIV infectivity and neutralization, the cDNAs for the human FcαRI and the FcRγ chain were transduced into TZM-bl cells.

Results

Stable surface expression of FcαRI and the FcRγ chain on this new TZM-bl cell line was confirmed by flow cytometry. In addition, the FcαR expressed on this cell line was able to bind secretory IgA from human colostrum. The cell line was fully susceptible to HIV-1 infection as the levels of CD4, CCR5, and CXCR4 remained comparable to the parental cell line. In contrast to what we have observed with FcγRs expression on TZM-bl cells, FcαR expression had no effect on the neutralizing activity of an IgA version of 2F5 when assayed against four different HIV-1 variants.

Conclusion

Our preliminary results suggest that FcαR has no effect on the neutralizing activity of gp41 MPER-specific IgA. Thus, the phenomenon observed with FcγRs and MPER antibodies seems to be immunoglobulin class and Fc receptor specific. Additional work is in progress to characterize other HIV-1-specific IgAs.