Exploring the therapeutic potential of Fabs derived from novel anti-Siglec-1 mAbs with the ability to block HIV-1 capture

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Toledo, 11 DEC 2019
HIV-1 disseminates taking advantage of Siglec-1

Novel anti Siglec-1 mAbs efficacy

Perez Zsolt, et al. (2019) Nature Microbiology
Anti Siglec-1 mAbs vs Anti Siglec-1 Fabs

Constant Region

Variable Region

Antigen binding site

Approved Fabs:
• Abciximab (Reopro ®)
• Idarucizumab (Proxbind ®)
• Ranibizumab (Leucentis ®)
• Certolizumab (Cimzia ®)
Aim

Can Fabs derived from novel anti-Siglec-1 mAbs efficiently block viral capture mediated by Siglec-1 and inhibit HIV-1 trans-infection?
Fab purity test

anti-Siglec-1 mAbs

anti-Siglec-1 Fabs

Siglec-1

1F5

5B10

Fab 1F5

Fab 5B10

Iso

Fc+ Raji Siglec-1%
Fabs block HIV-1 VLP capture in Raji Siglec-1
Fabs IC50

HIV-1 VLP Gag-eGFP+ %

Concentration (ug/mL)

1F5
Fab 1F5
5B10
Fabs 5B10
Iso C
Fabs efficiently block HIV-1 Capture in DCs
Conclusion

• Since anti Siglec-1 Fabs block HIV-1 capture on primary DCs, these potential antivirals could be used in combination with Anti Retroviral Therapy (ART) to reach lymphoid tissues and block HIV-1 trans-infection