Themed Discussion-06

Tuesday, March 11, 2025

444 - RV550: IL-15 Superagonist N-803 With ART in Acute HIV Infection Enhances T and NK Cell Proliferation

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Disclosure: Dr Takata has no financial relationships with ineligible companies to disclose.

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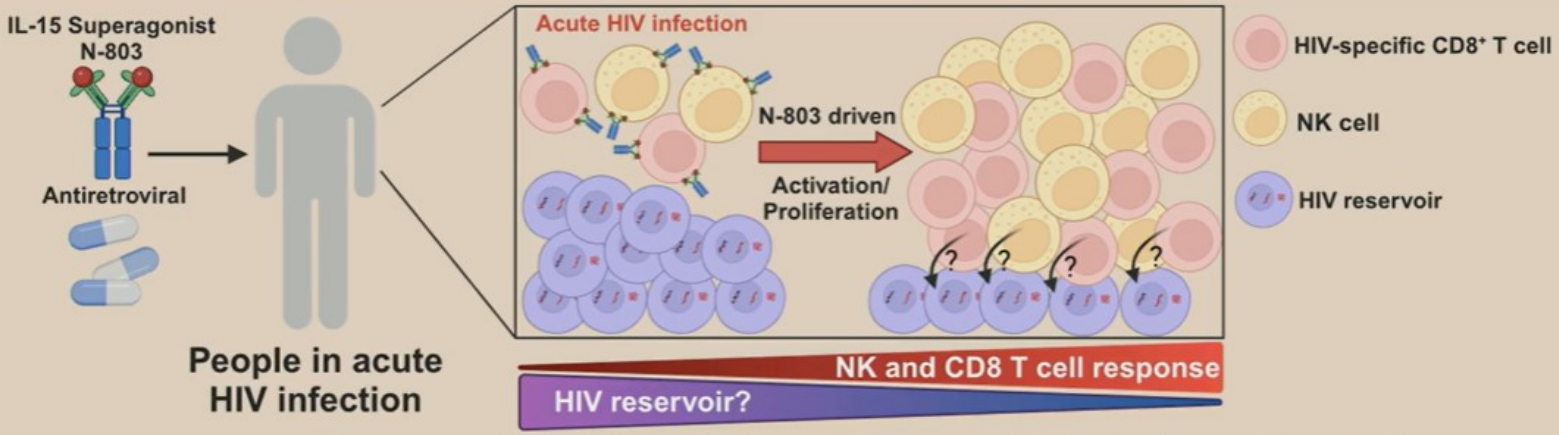
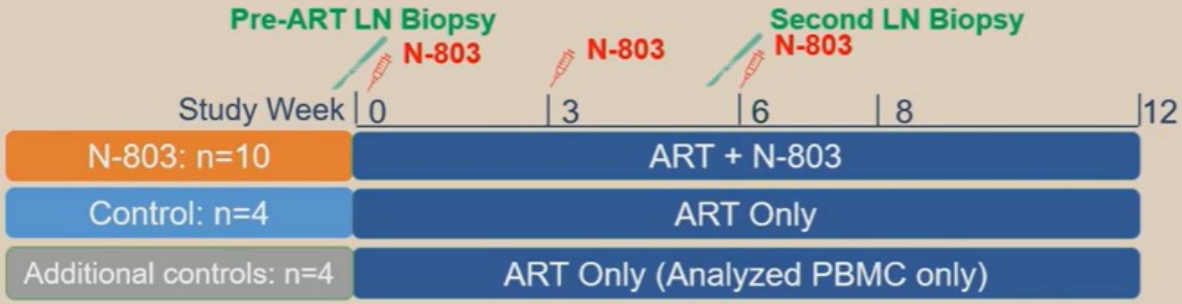
N-803 administration alongside ART during acute HIV infection would enhance immune function and disrupt HIV reservoir seeding?



Ellis-Connell J Virol 2018, Webb Blood Adv 2018, Watson PLoS Pathog 2018, Miller Nat Med 2022.

RV550 study design



See Poster ***512***
Carlo Sacdalan et al.

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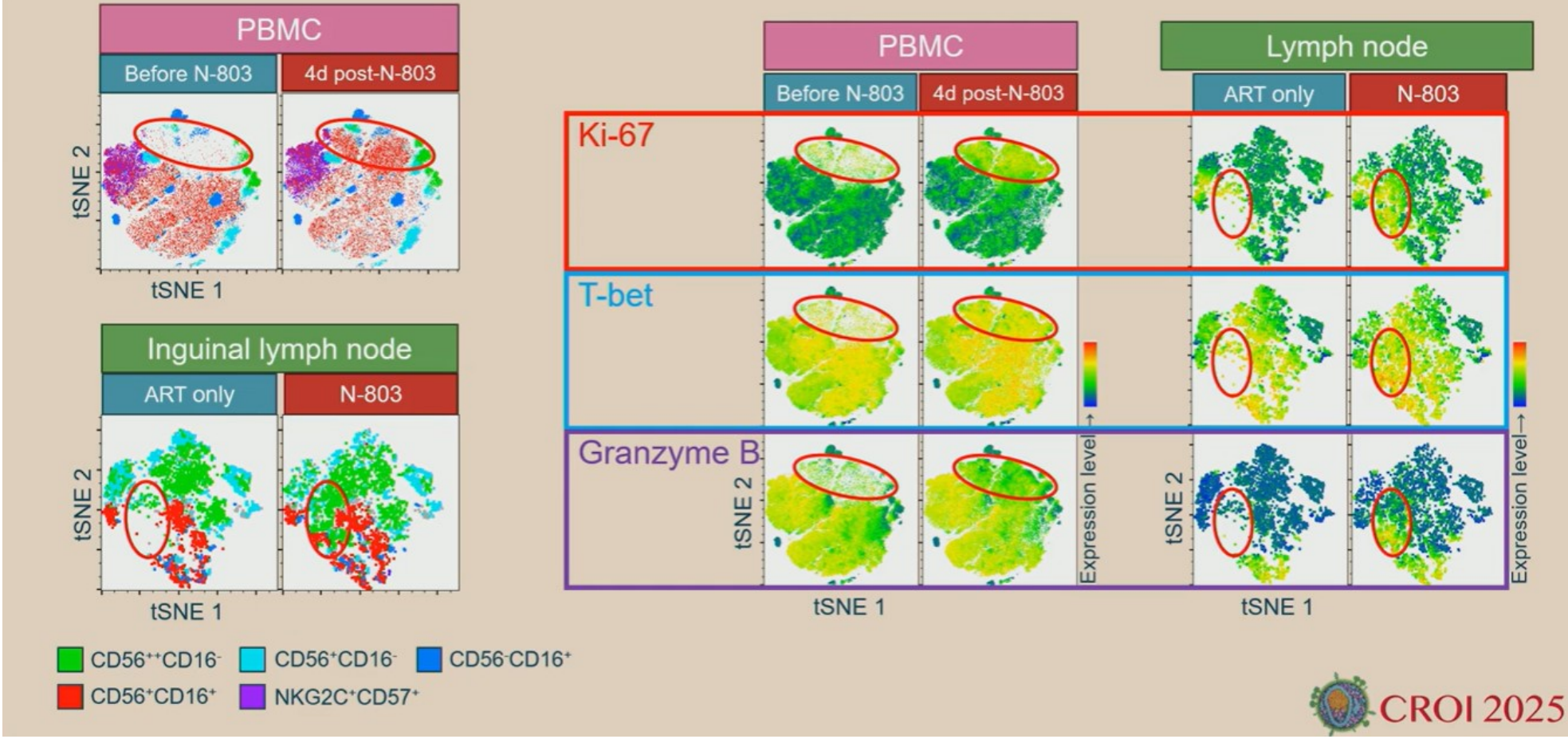
N-803 treatment induced distinct NK cell populations in blood and lymph nodes



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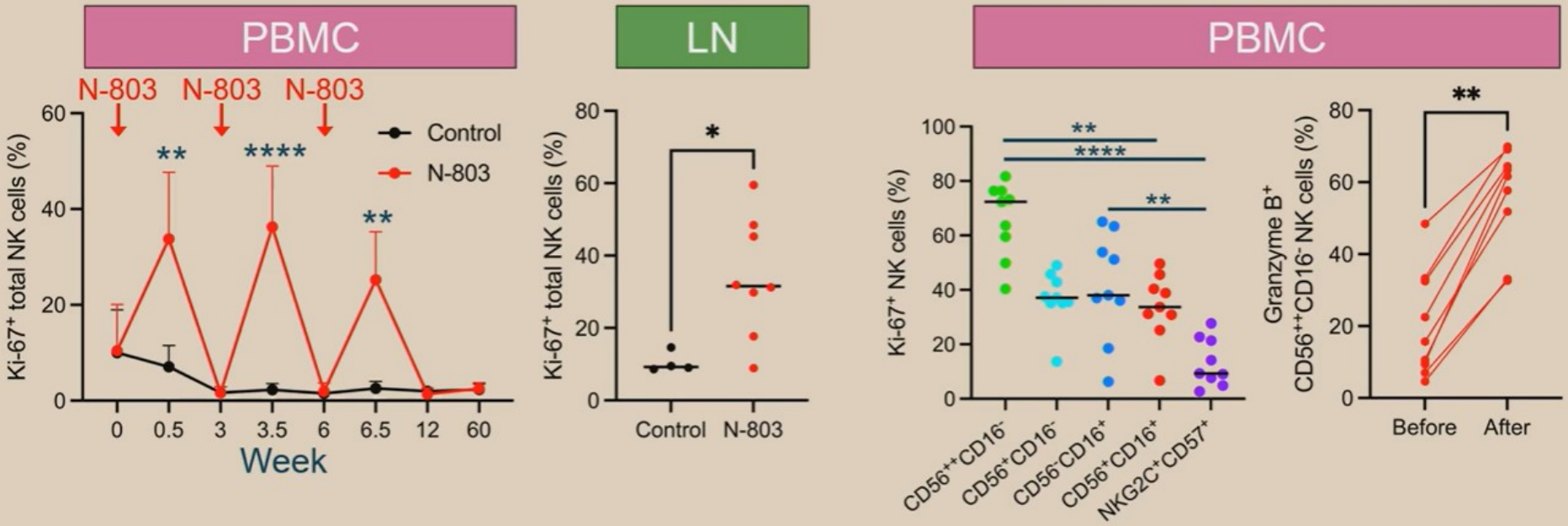
N-803 promoted proliferation and effector differentiation of NK cells in blood and lymph nodes



CD56^{++}CD16^{-} NK cells showed the highest frequency of Ki-67^{+} cells among NK cell subsets after N-803 treatment.

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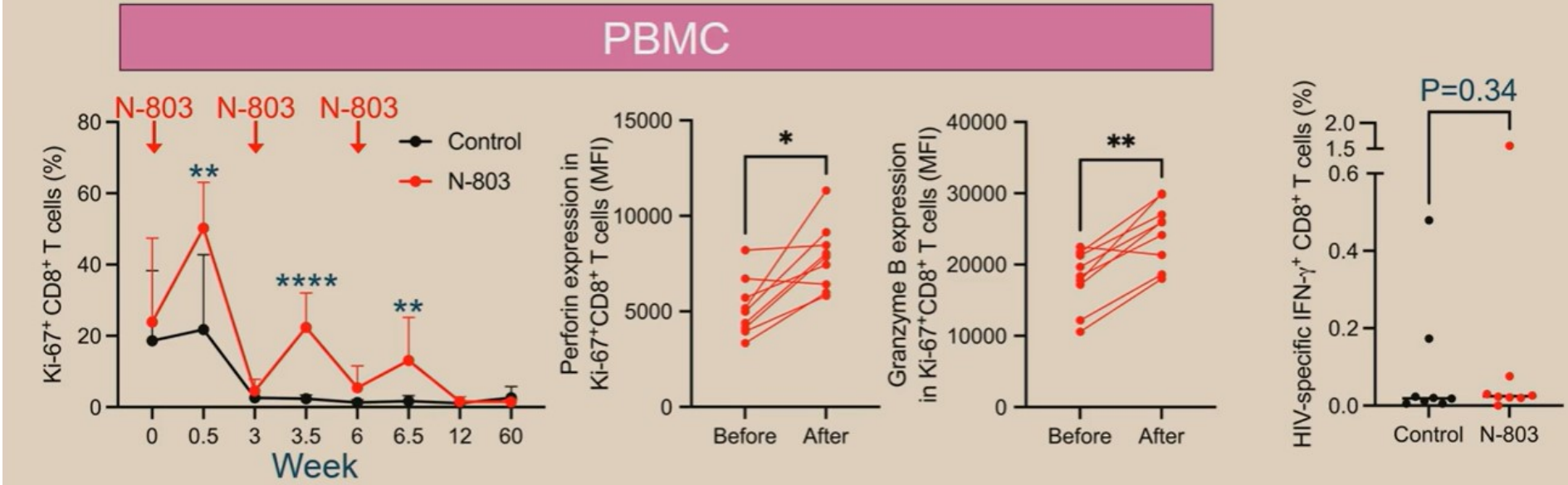
N-803 also promoted the proliferation and differentiation of CD8⁺ T cells in blood and lymph nodes



Upregulated expression of cytolytic molecules Perforin and Granzyme B was observed in Ki-67⁺ CD8⁺ T cells after N-803 treatment.

Conclusions

- N-803 treatment alongside ART during acute HIV infection induced robust activation, proliferation and expansion of NK cells and both $CD8^+$ and $CD4^+$ T cells
- N-803 treatment alone had minimal effect on the magnitude of HIV-specific $CD8^+$ T cell responses and levels of cell associated HIV RNA/DNA in blood

  *See Poster **512, Carlo Sacdalan et al.***
- N-803 has potential for use in combination with adjunctive therapies during acute HIV infection to further enhance the effector activity of HIV-specific T cells and NK cells for post-ART viral control

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