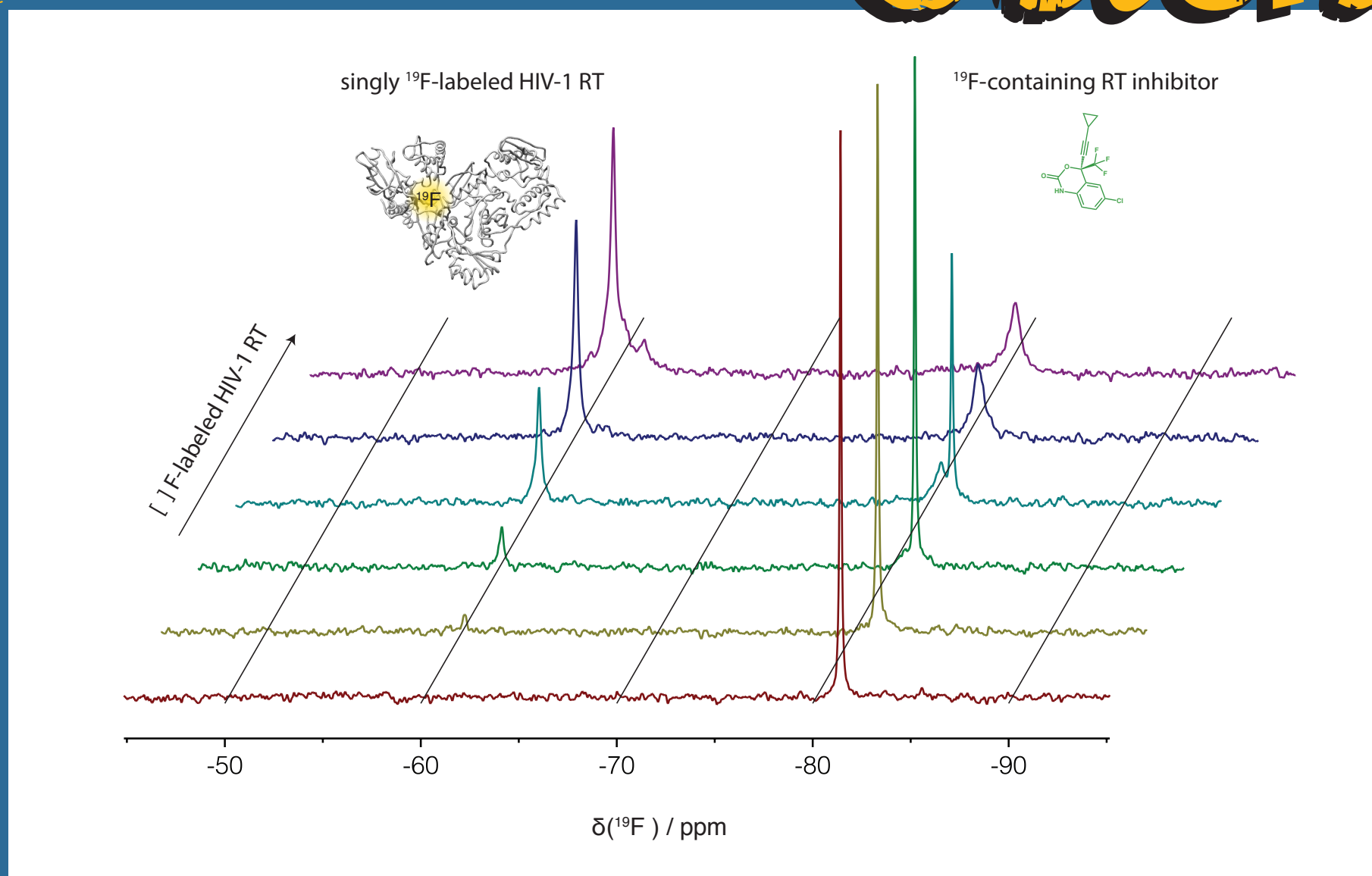




Titration of ^{19}F -containing RT inhibitor (Efavirenz) singly ^{19}F -labeled HIV-1 reverse transcriptase (118 KDa)

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Field strength: 600 MHz

Why is this your favorite spectrum?

I think these data perfectly demonstrate the power of ^{19}F solution NMR. The ^{19}F nucleus has high sensitivity, so we can detect ^{19}F signals from both the large protein and the small inhibitor. The ^{19}F chemical shifts are exquisitely sensitive to changes in the local environment, thus the ^{19}F signals corresponding to the protein and inhibitor, which are distinct in chemical environments, are separated by over 20 ppm. ^{19}F is absent in virtually all biomolecules, so there is no interference by background signals.

I think it is beautiful to simultaneously detect the ^{19}F signals from probes located in both the protein and inhibitor. I also really love that the line width of the ^{19}F signal from the inhibitor increases due to the increase in apparent MW of the inhibitor-protein complex.