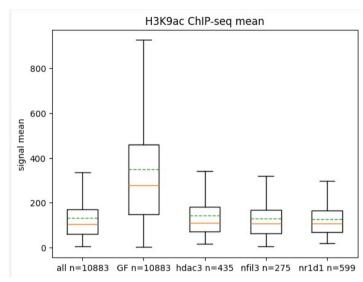
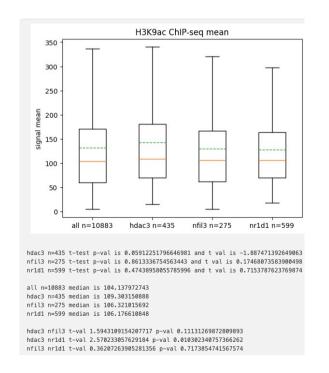
Correction from last analysis:

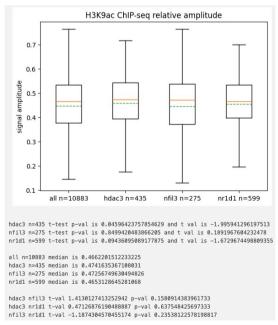
- 1. skipped p-value filtering
- 2. used the correct unique gene sets for hdac3, nfil3, and nr1d1
- 3. used relative amplitude instead of absolute for cross regulator comparison

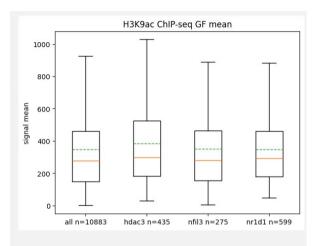
HDAC activity are generally inhibited by the microbiota so GF signals are higher

### H3k9ac



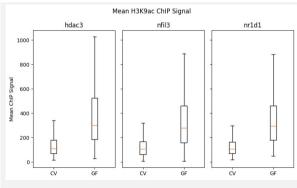






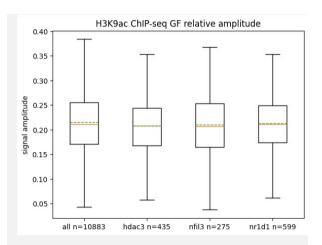
hdac3 n=435 t-test p-val is 0.012000979742045871 and t val is -2.5125213191522655 nfil3 n=275 t-test p-val is 0.91159732394837 and t val is -0.1102656975714007 nrld1 n=599 t-test p-val is 0.1031602251016011 and t val is 0.12381966982971107

all n=10883 median is 277.513192993 hdac3 n=435 median is 300.29050204 nfil3 n=275 median is 279.86991976 nrld1 n=599 median is 293.678208452



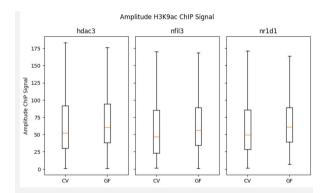
hdac3 t test p-val is 2.3312308248504718e-49 and t-val is -15.751974977436651 nfil3 t test p-val is 1.983287829404803e-29 and t-val is -11.954148834503858 nrld1 t test p-val is 2.6409856727809476e-89 and t-val is -21.84702173908795

median CV 109.303150888 and median GF 300.29050204 median CV 106.321015692 and median GF 279.86991976 median CV 106.176610848 and median GF 293.678208452



hdac3 n=435 t-test p-val is 0.038358026062058535 and t val is 2.071250263380728 nfil3 n=275 t-test p-val is 0.220449503662297 and t val is 1.2254024239320664 nrid1 n=599 t-test p-val is 0.5171738714833003 and t val is 0.6477279574546374

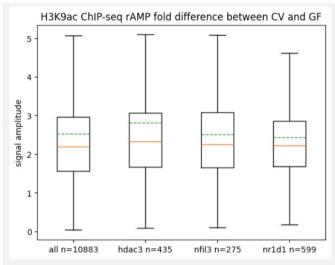
all n=10883 median is 0.2106680001642845 hdac3 n=435 median is 0.20807590035410925 ffil3 n=275 median is 0.20631006350532846 nrId1 n=599 median is 0.21114572537004658



0.8311356814152129
hdac3 t test p-val is 0.8311356814152129 and t-val is -0.2133094648437976
hfil3 t test p-val is 0.4787382915299754 and t-val is -0.7217788758515512
nrId1 t test p-val is 0.01809547251850067 and t-val is -2.3669174411026255

median CV 52.4520619587 and median GF 60.3278485556 median CV 46.659310633 and median GF 56.2726211944 median CV 49.6579711582 and median GF 60.7942442741

### CV rAMP GF rAMP

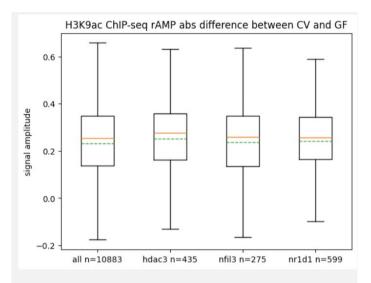


hdac3 n=435 t-test p-val is 0.01937727953167498 and t val is -2.338526325625614 nfil3 n=275 t-test p-val is 0.9089782760384548 and t val is 0.11432997888338457 nr1d1 n=599 t-test p-val is 0.3409186905683642 and t val is 0.9523911634843307

all n=10883 median is 2.192677727053652 hdac3 n=435 median is 2.3282023771966665 ffil3 n=275 median is 2.2570176397734762 nrld1 n=599 median is 2.2310743019852195

hdac3 nfil3 t-val 1.2054506927057815 p-val 0.22843208756802652 hdac3 nr1d1 t-val 2.1709030926593353 p-val 0.03016586122790186 nfil3 nr1d1 t-val 0.7346885858668799 p-val 0.4627266951032032

#### CV TAMP - GF TAMP

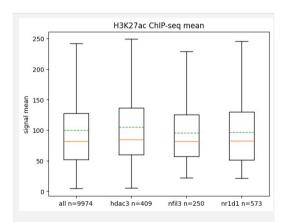


hdac3 n=435 t-test p-val is 0.017343422356388347 and t val is -2.3796954796309095 nfil3 n=275 t-test p-val is 0.6984194537313823 and t val is -0.38746490432499314 nr1d1 n=599 t-test p-val is 0.12724321819258888 and t val is -1.525174130759016

all n=10883 median is 0.25373491743743104 hdac3 n=435 median is 0.2754979862710556 nfil3 n=275 median is 0.2582281874486743 nr1d1 n=599 median is 0.2571883359324218

hdac3 nfil3 t-val 1.2450461203512677 p-val 0.2135267274780293 hdac3 nr1d1 t-val 0.9186182053390097 p-val 0.3585099520724351 nfil3 nr1d1 t-val -0.5992030683892696 p-val 0.5491931167296215

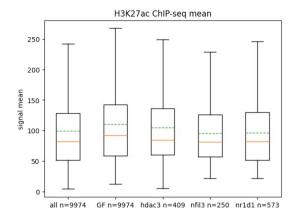
## H3 K27ac

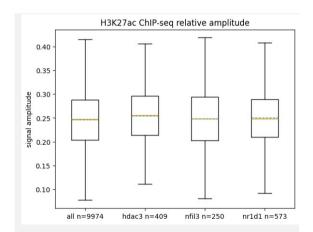


hdac3 n=409 t-test p-val is 0.17098379956549664 and t val is -1.369144281438643 nfil3 n=250 t-test p-val is 0.39849009200278115 and t val is 0.844356340993082 nfil4 n=573 t-test p-val is 0.308325093129851 and t val is 1.0187970656840138

all n=9974 median is 82.03368221644999 hdac3 n=409 median is 84.9134194123 nfil3 n=250 median is 81.71509003345 nrld1 n=573 median is 82.4818387314

hdac3 nfil3 t-val 1.8435117938074124 p-val 0.06570450635468829 hdac3 nr1d1 t-val 2.095627553366064 p-val 0.0836371323044724825 nfil3 nr1d1 t-val -0.17905240893603255 p-val 0.8579407268064613

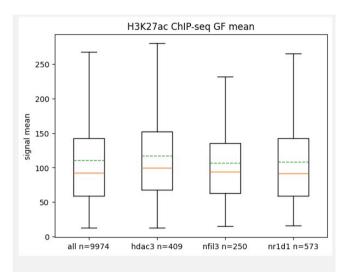




hdac3 n=400 t-test p-val is 0.013317453276007684 and t val is -2.47559013317869 nfil3 n=250 t-test p-val is 0.5655317997023201 and t val is -0.5746631216492639 nrid1 n=573 t-test p-val is 0.12197102875558671 and t val is -1.5466775464737135

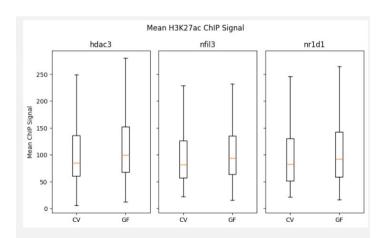
all n=9974 median is 0.2478434221203309 hdac3 n=409 median is 0.2555606416533152 nfil3 n=250 median is 0.24807841048347787 nrld1 n=573 median is 0.24812055689884663

hdac3 nfil3 t-val 1.1820144884304715 p-val 0.23762758127923306 hdac3 nr1d1 t-val 0.988370826584435 p-val 0.32321502906465394 nfil3 nr1d1 t-val -0.408997690379002 p-val 0.6826480236454718



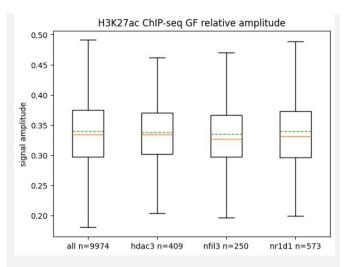
hdac3 n=409 t-test p-val is 0.07826014890909946 and t val is -1.7610454445442212 nfil3 n=250 t-test p-val is 0.3778774372610988 and t val is 0.881852268511662 nr1d1 n=573 t-test p-val is 0.4647480908585726 and t val is 0.7310774502394689

all n=9974 median is 92.7633690927 hdac3 n=409 median is 99.4515268355 nfil3 n=250 median is 93.95045212970001 nr1d1 n=573 median is 91.8861909497



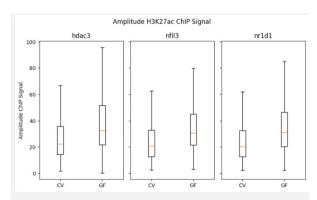
hdac3 t test p-val is 0.008653416838086231 and t-val is -2.6318146665951816 nfil3 t test p-val is 0.0401552266611423 and t-val is -2.0575309684373826 nrld1 t test p-val is 0.00130359501641984 and t-val is -3.2231710660982507

median CV 84.9134194123 and median GF 99.4515268355 median CV 81.71509003345 and median GF 93.95045212970001 median CV 82.4818387314 and median GF 91.8861909497



hdac3 n=409 t-test p-val is 0.5909696334699301 and t val is 0.5374481177282147 nfil3 n=250 t-test p-val is 0.24202198089136392 and t val is 1.1700155712502547 nr1d1 n=573 t-test p-val is 0.9029766916630455 and t val is 0.12190485727540198

all n=9974 median is 0.3335880308577744 hdac3 n=409 median is 0.3337902447056782 nfil3 n=250 median is 0.3269379799913077 nrId1 n=573 median is 0.3310495024085098

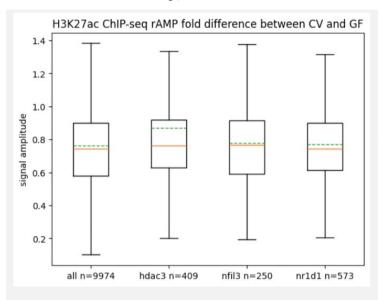


4.596048638618584e-16

hdac3 t test p-val is 4.596048638618584e-16 and t-val is -8.291281253991576 nfil3 t test p-val is 4.311587142523141e-11 and t-val is -6.742979947586874 nrid1 t test p-val is 1.767646738811798e-25 and t-val is -11.69311838137579

median CV 22.3347921544 and median GF 32.4194728666 median CV 20.579456021200002 and median GF 30.6078279105 median CV 20.2610241496 and median GF 31.1391512335

# CV rAMP

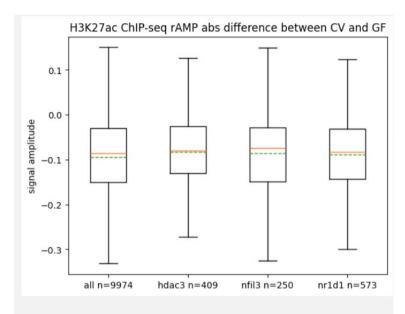


hdac3 n=409 t-test p-val is 0.00021015795003068296 and t val is -3.70779820995426! nfil3 n=250 t-test p-val is 0.586669978077639 and t val is -0.5436851961358244 nr1d1 n=573 t-test p-val is 0.7782584609810707 and t val is -0.28159648543723903

all n=9974 median is 0.7423599032204596 hdac3 n=409 median is 0.7644102610406726 nfil3 n=250 median is 0.7665581897837488 nrld1 n=573 median is 0.7455256621400929

hdac3 nfil3 t-val 0.8072688209436744 p-val 0.41980377476285846 hdac3 nr1d1 t-val 1.355696184495359 p-val 0.1755081781953374 nfil3 nr1d1 t-val 0.509072913639339 p-val 0.6108379020003738

### CV rAMP - GF rAMP



hdac3 n=409 t-test p-val is 0.04257425944063621 and t val is -2.02811242474225 nfil3 n=250 t-test p-val is 0.2305686973360767 and t val is -1.1989666737245215 nr1d1 n=573 t-test p-val is 0.2636005147376799 and t val is -1.1179811458092674

all n=9974 median is -0.08619929383853325 hdac3 n=409 median is -0.08005129398060545 nfil3 n=250 median is -0.07389590169501692 nr1d1 n=573 median is -0.08248054500092966

hdac3 nfil3 t-val 0.3302132697756039 p-val 0.7413440869925001 hdac3 nr1d1 t-val 0.8913790890352615 p-val 0.3729446264115407 nfil3 nr1d1 t-val 0.39309307367476076 p-val 0.6943527878180336