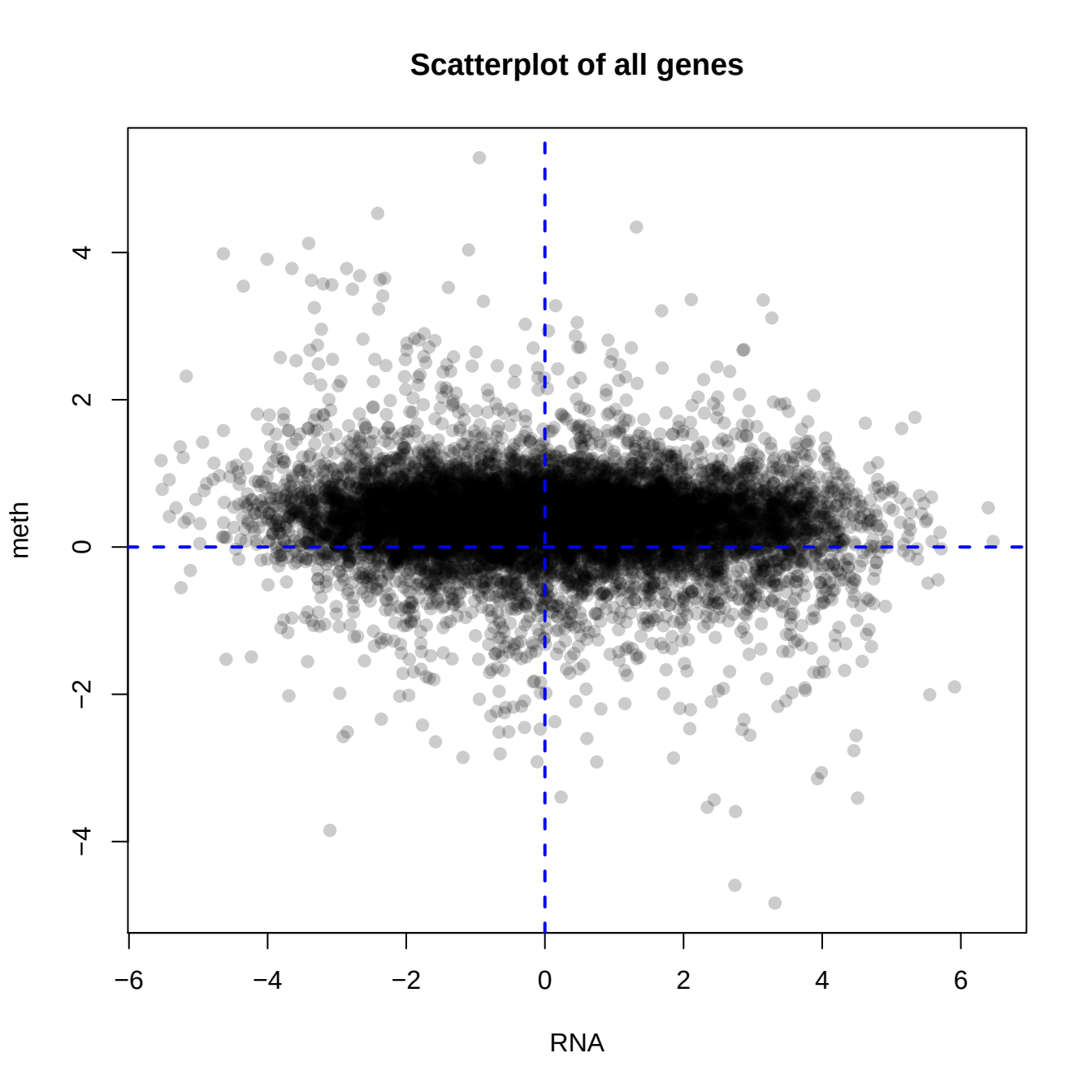
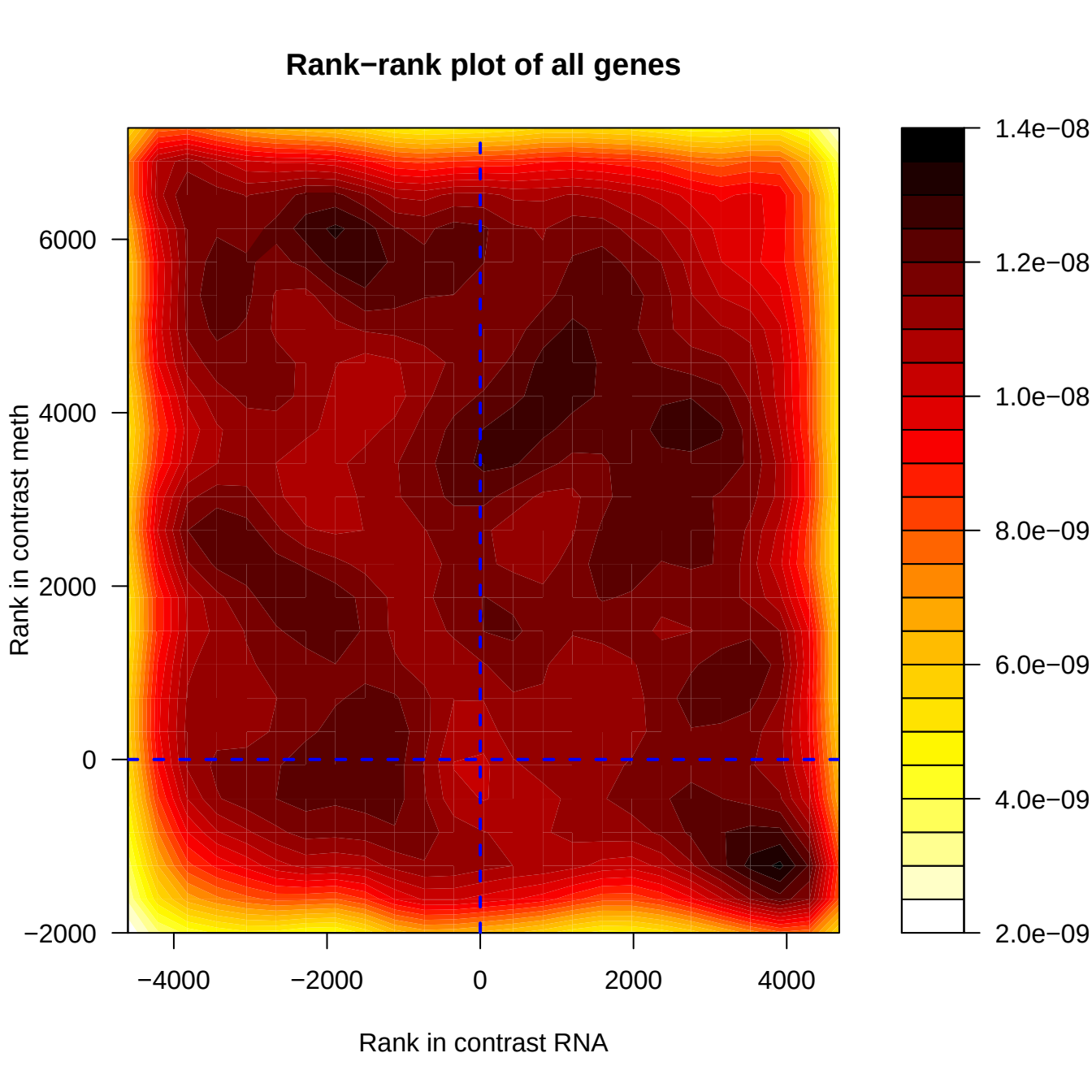
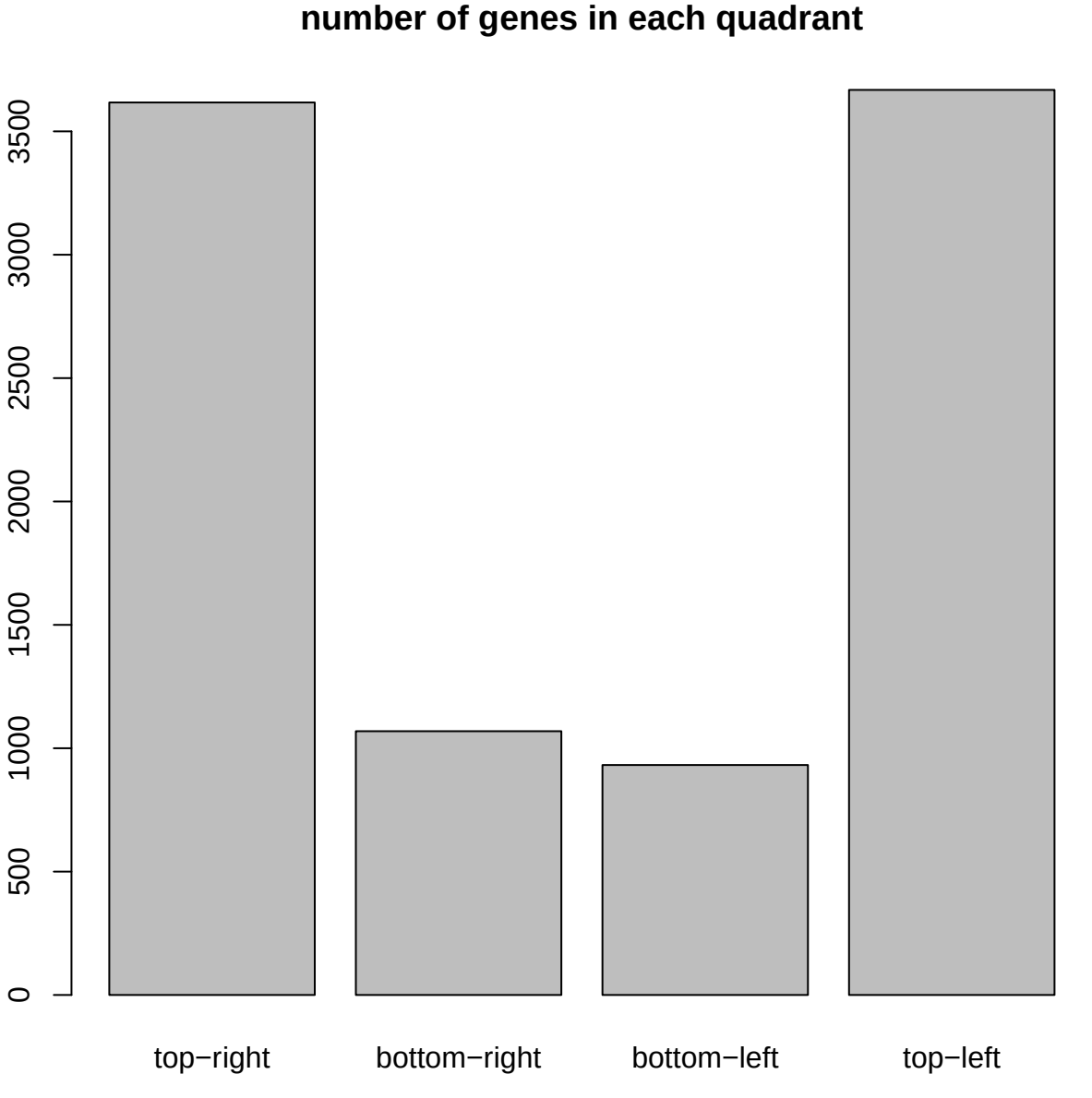
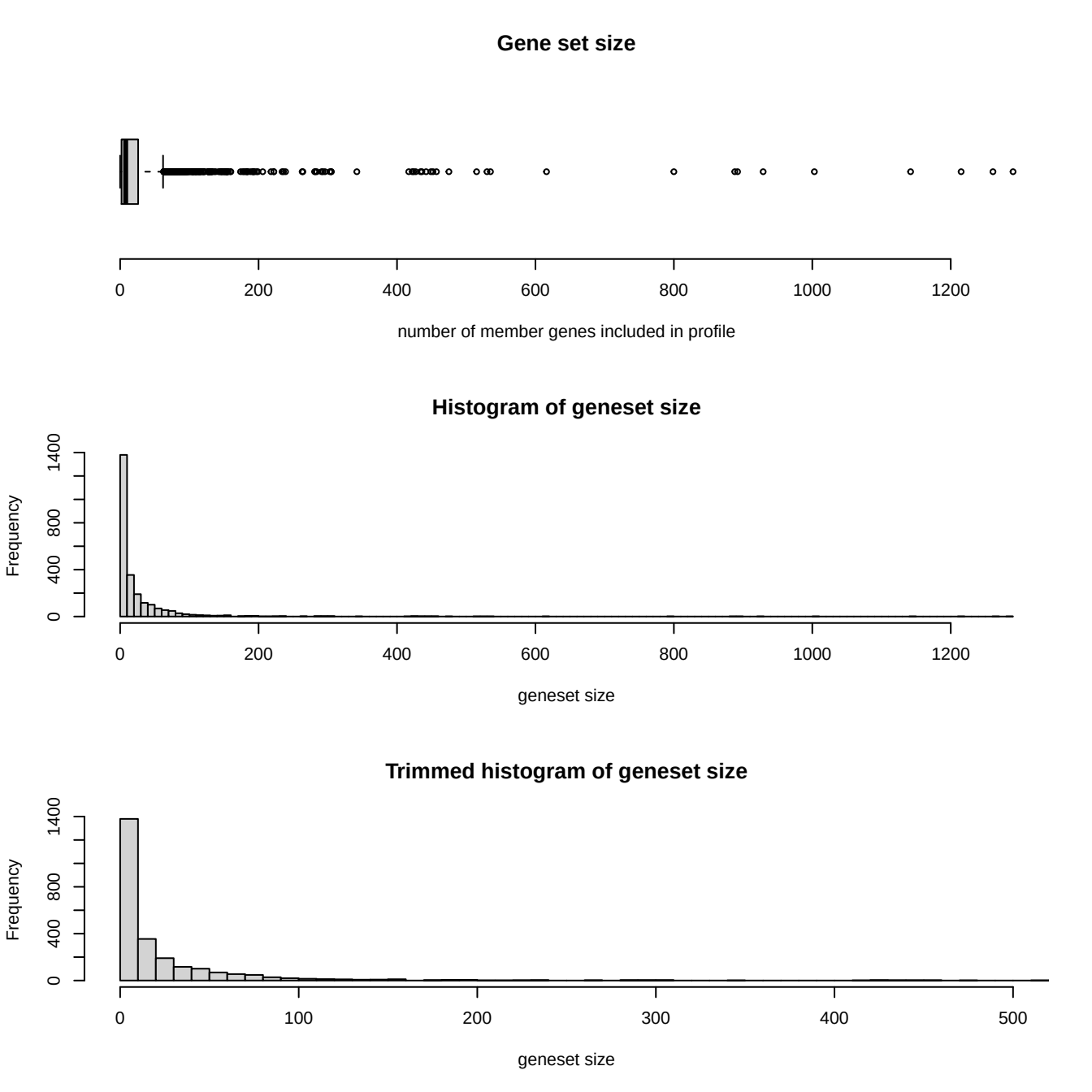
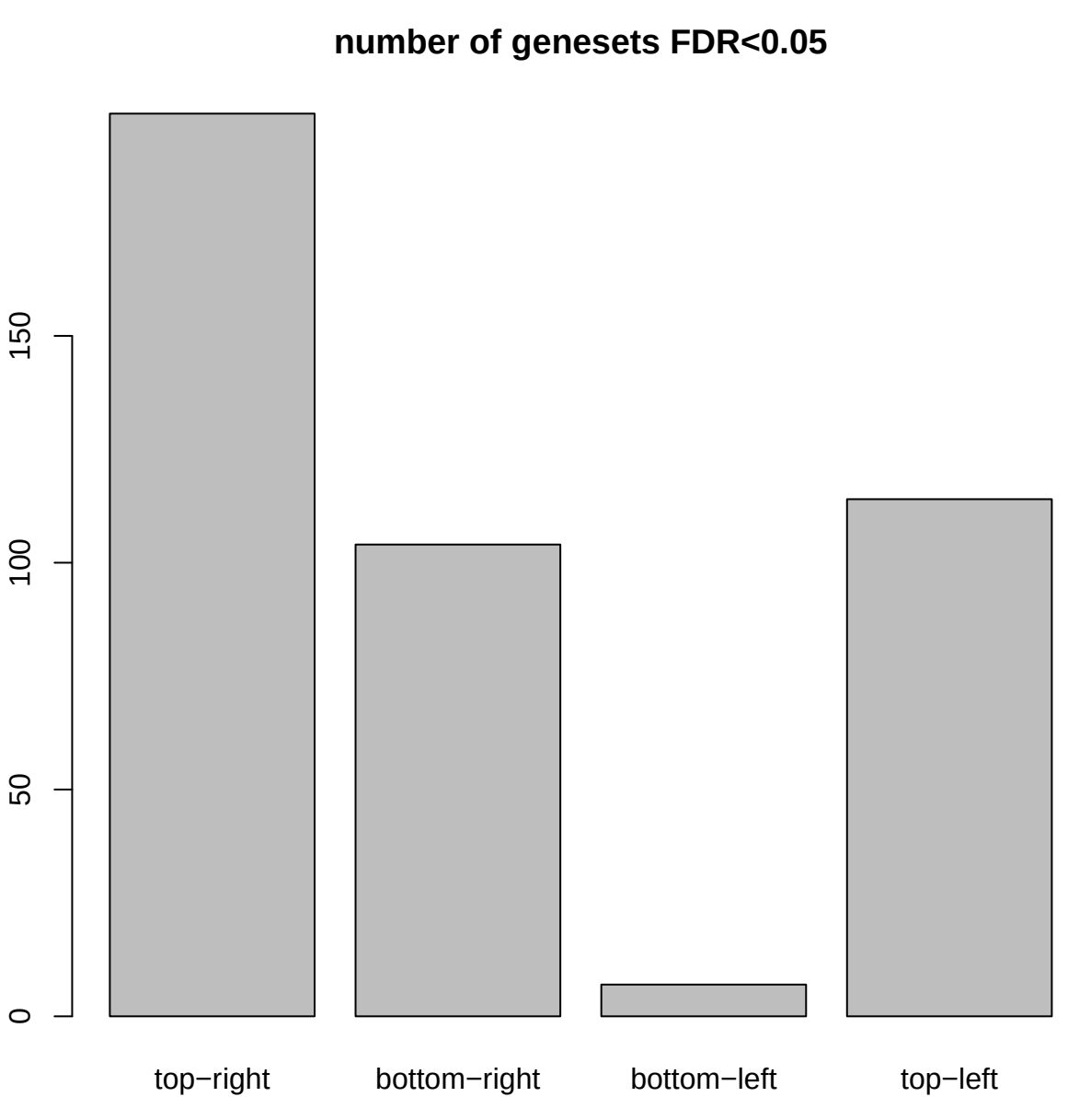
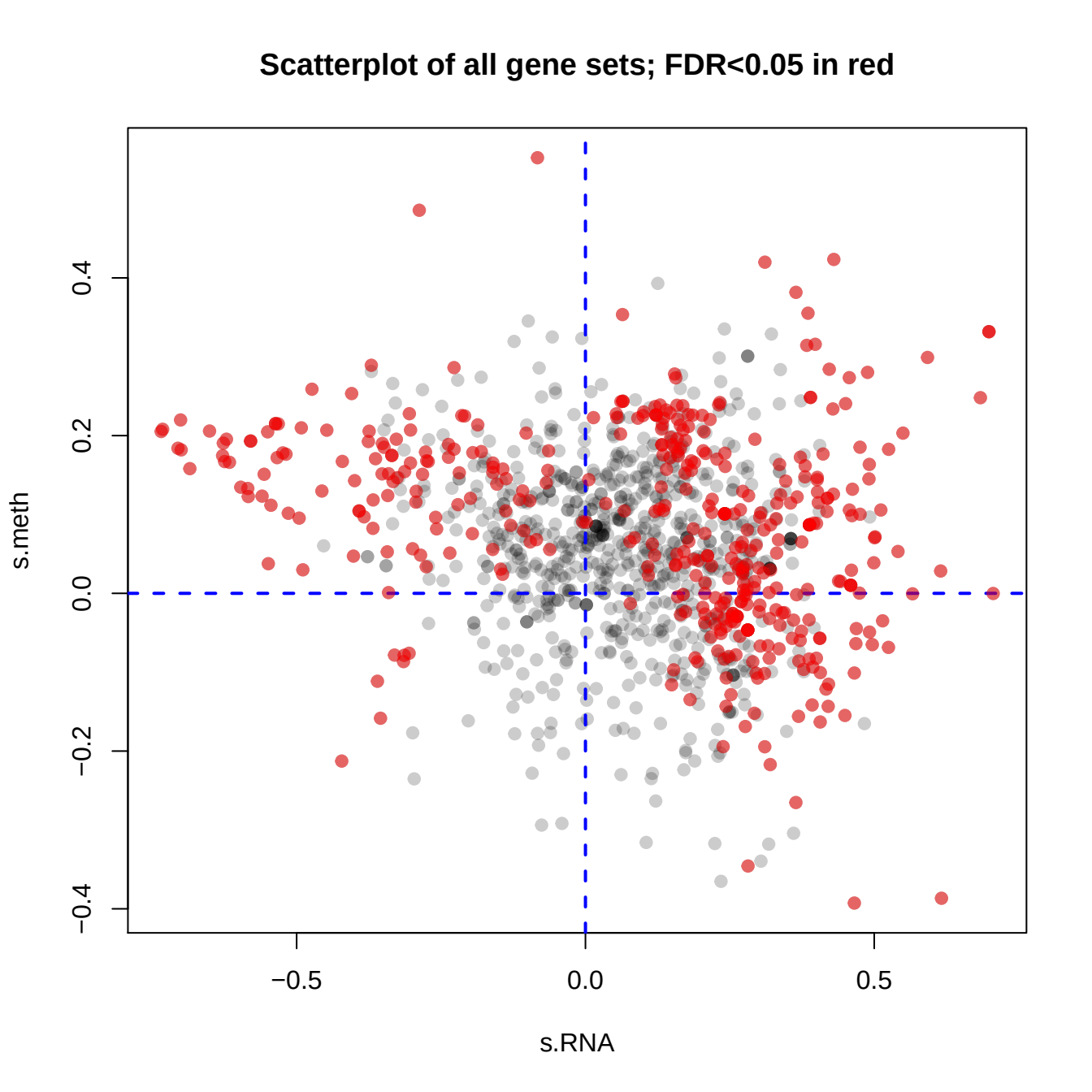

Scatterplot of all genes
meth
RNA
4
2
0
−2
−4
−6
−4
−2
0
2
4
6

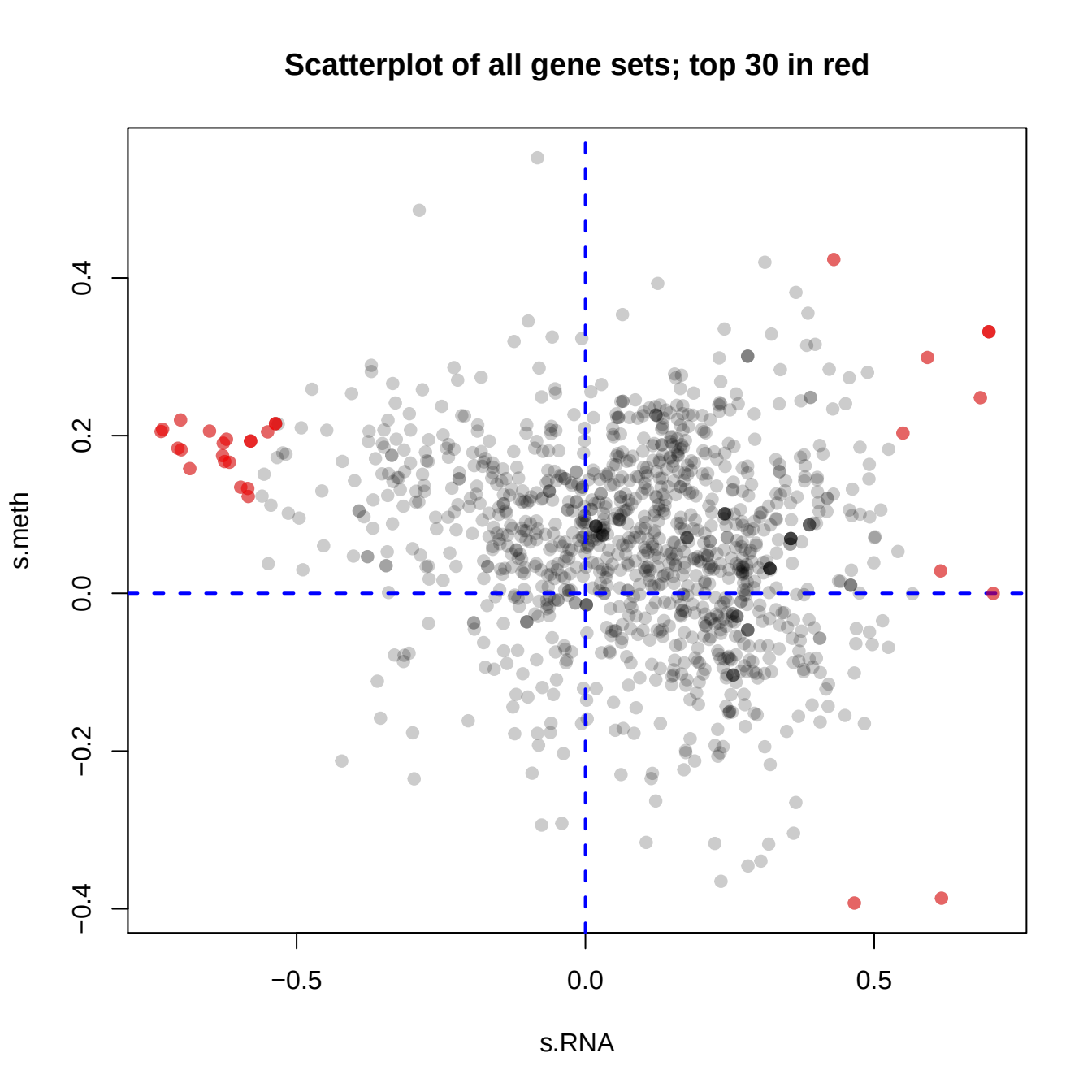

Rank−rank plot of all genes
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
1.4e−08
1.2e−08
1.0e−08
8.0e−09
6.0e−09
4.0e−09
2.0e−09

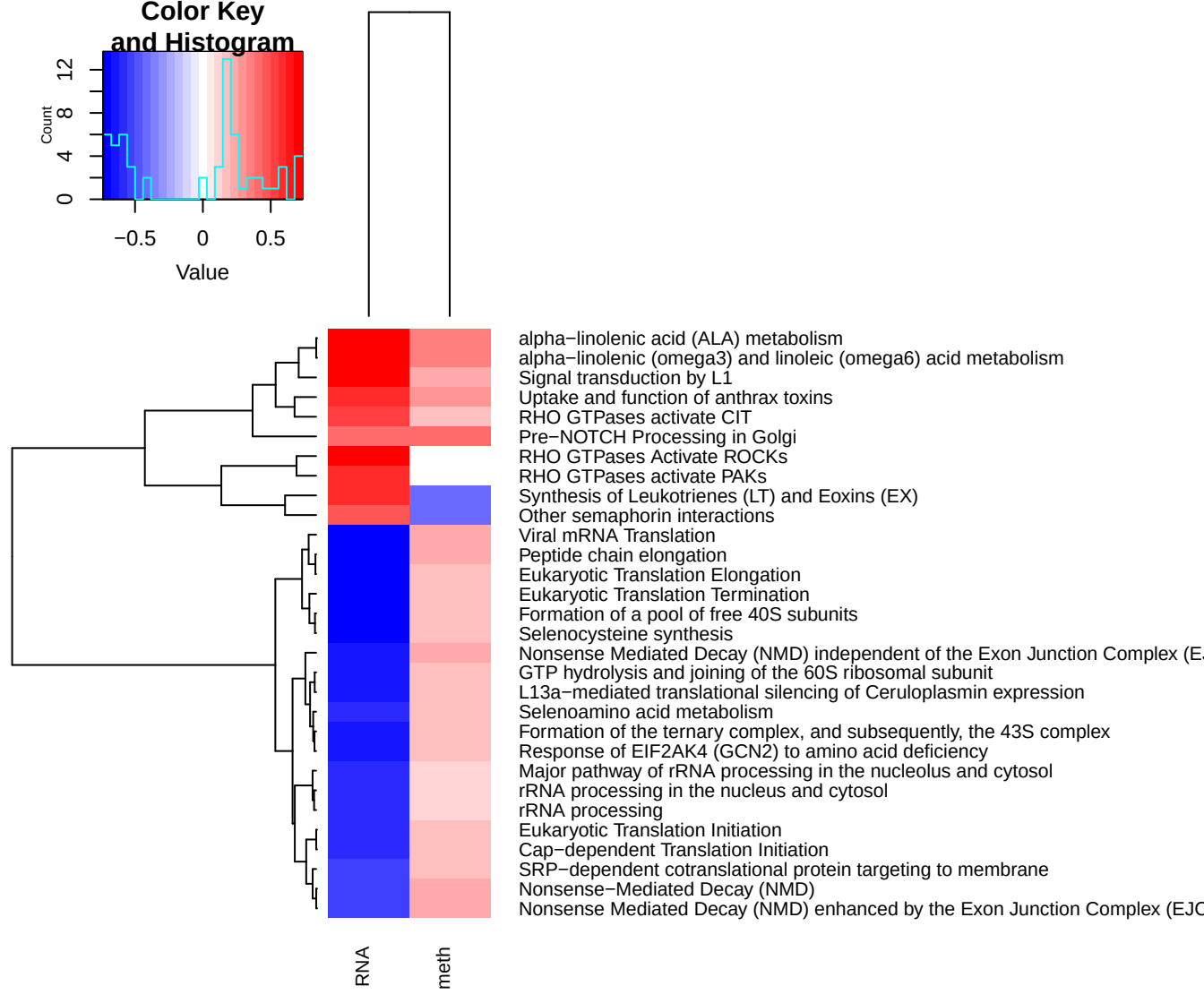

number of genes in each quadrant
0
500
1000
1500
2000
2500
3000
3500
top−right
bottom−right
bottom−left
top−left

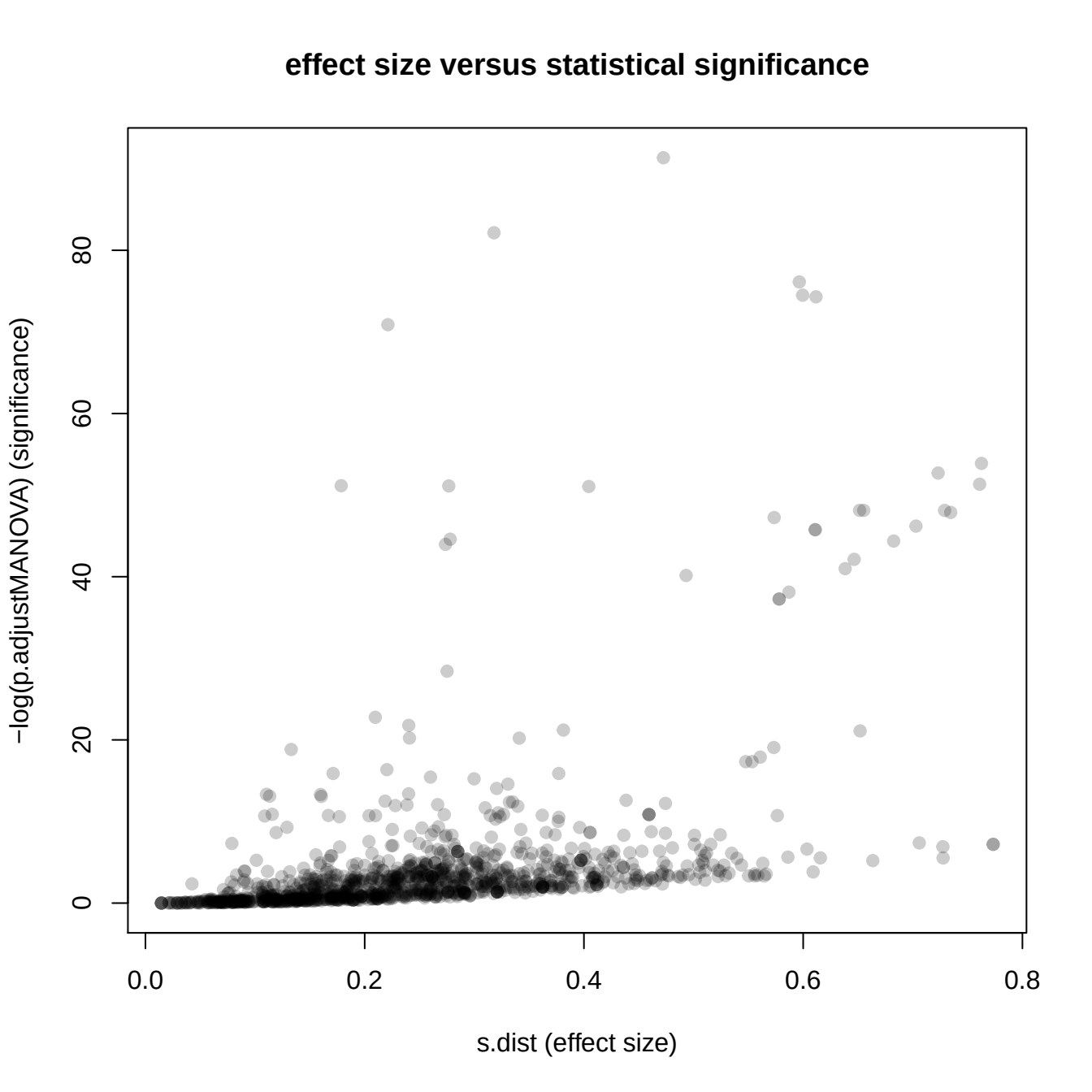

Gene set size
0
200
400
600
800
1000
1200
number of member genes included in profile
Histogram of geneset size
Frequency
0
400
800
1400
0
200
400
600
800
1000
1200
geneset size
Trimmed histogram of geneset size
Frequency
0
400
800
1400
0
100
200
300
400
500
geneset size

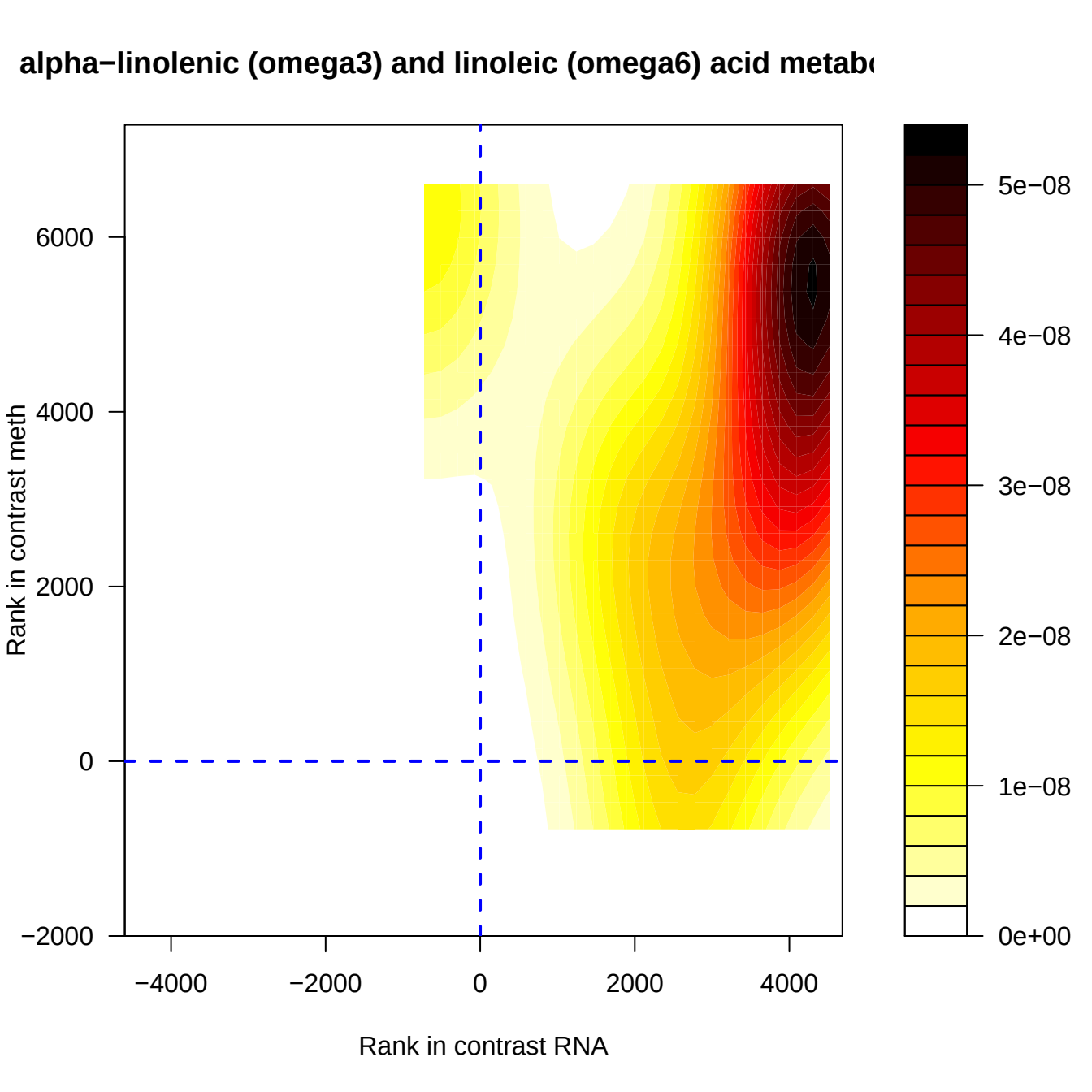

number of genesets FDR<0.05
0
50
100
150
top−right
bottom−right
bottom−left
top−left

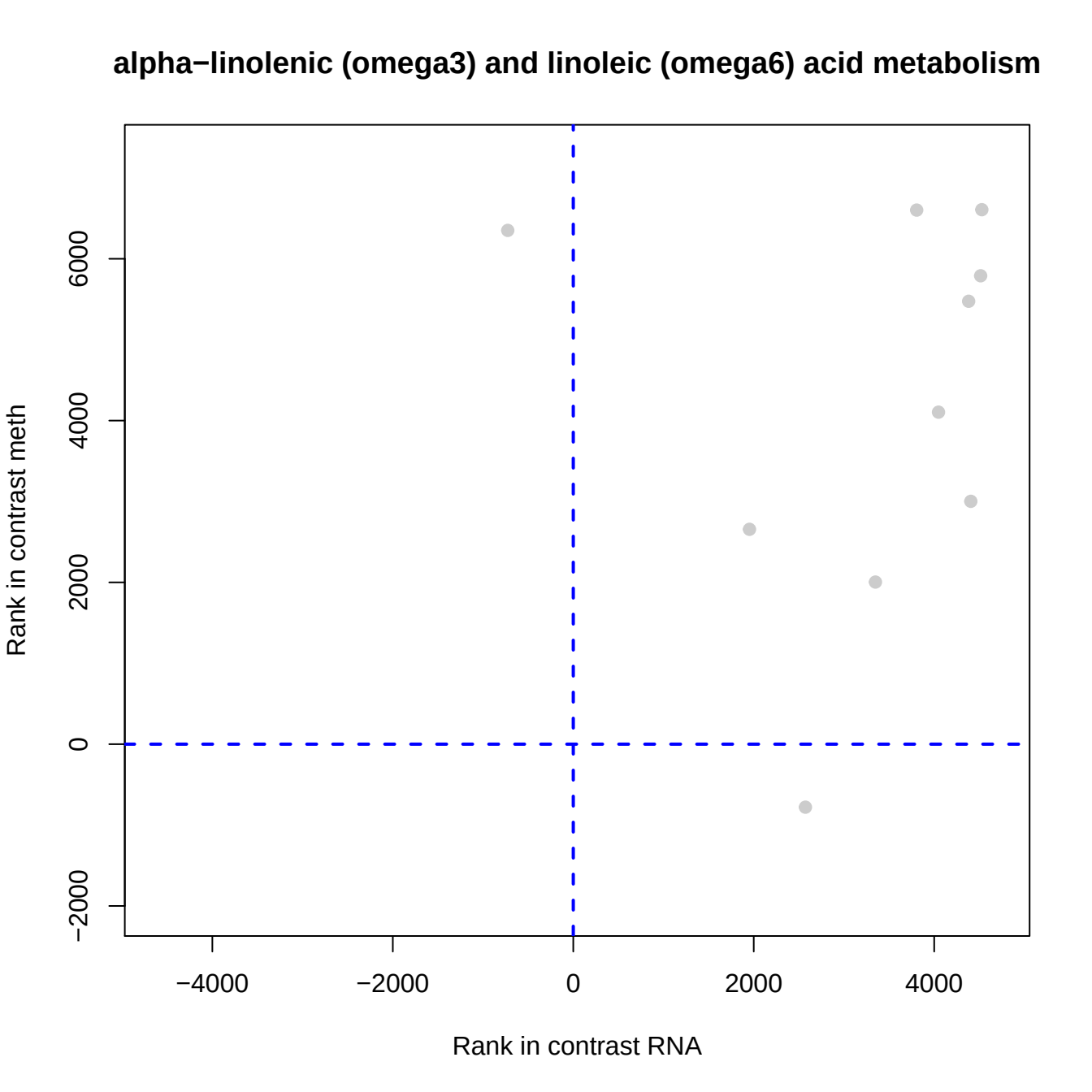

Scatterplot of all gene sets; FDR<0.05 in red
s.meth
0.4
0.2
0.0
−0.2
−0.4
−0.5
0.0
0.5
s.RNA

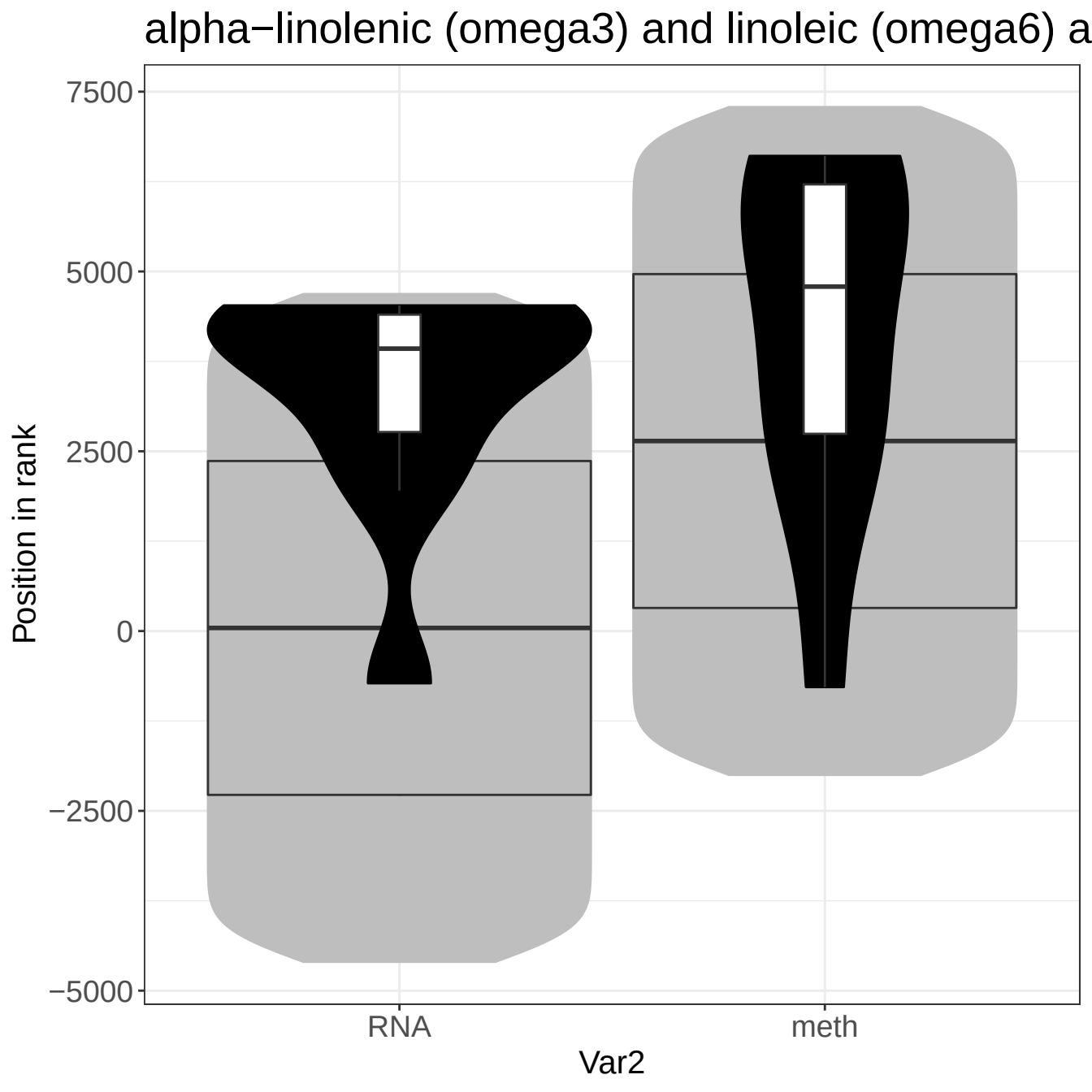

Scatterplot of all gene sets; top 30 in red
s.meth
s.RNA
0.4
0.2
0.0
−0.2
−0.4
−0.5
0.0
0.5

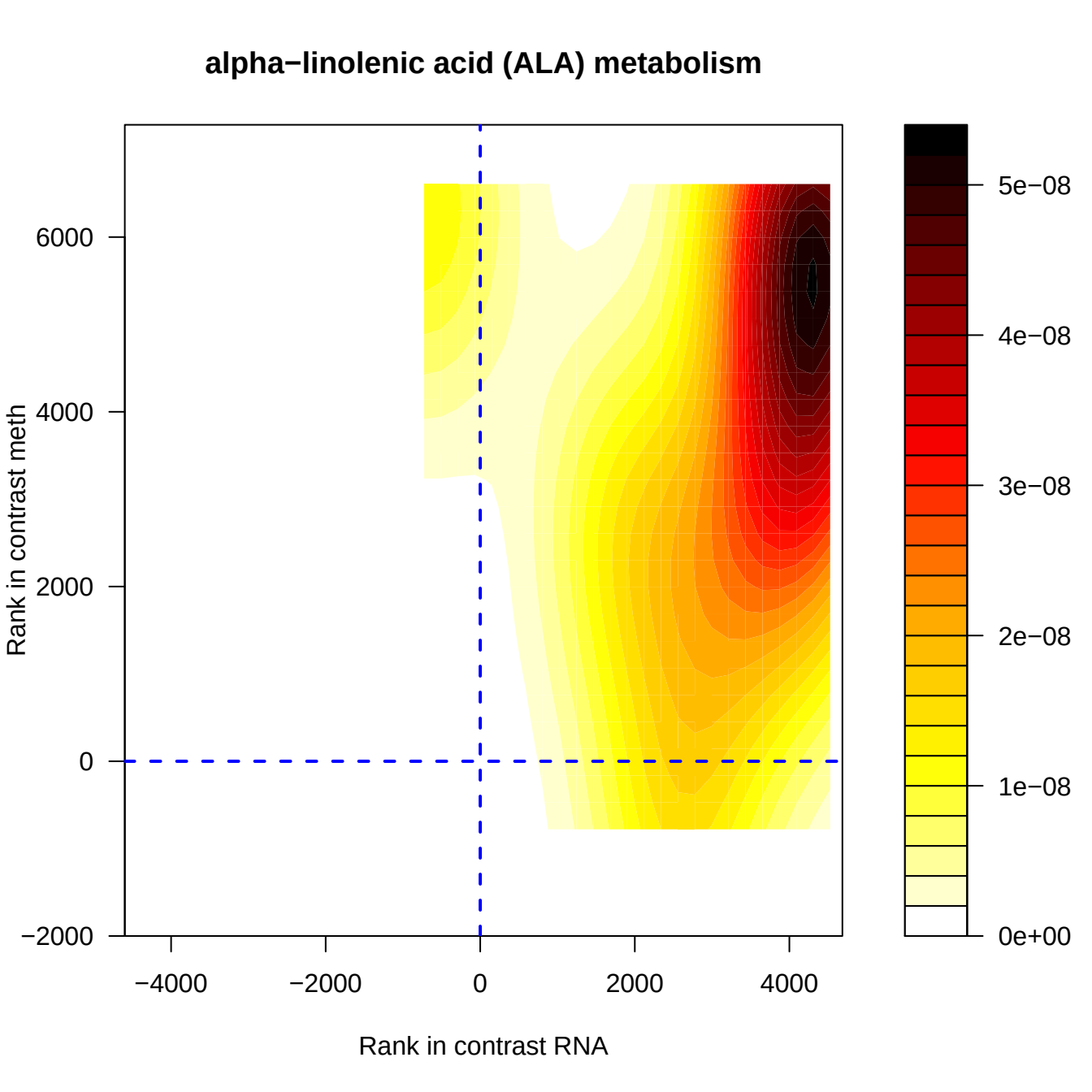

Color Key and Histogram
Count
0
4
8
12
−0.5
0
0.5
Value
alpha−linolenic acid (ALA) metabolism
alpha−linolenic (omega3) and linoleic (omega6) acid metabolism
Signal transduction by L1
Uptake and function of anthrax toxins
RHO GTPases activate CIT
Pre−NOTCH Processing in Golgi
RHO GTPases Activate ROCKs
RHO GTPases activate PAKs
Synthesis of Leukotrienes (LT) and Eoxins (EX)
Other semaphorin interactions
Viral mRNA Translation
Peptide chain elongation
Eukaryotic Translation Elongation
Eukaryotic Translation Termination
Formation of a pool of free 40S subunits
Selenocysteine synthesis
Nonsense Mediated Decay (NMD) independent of the Exon Junction Complex (E
GTP hydrolysis and joining of the 60S ribosomal subunit
L13a−mediated translational silencing of Ceruloplasmin expression
Selenoamino acid metabolism
Formation of the ternary complex, and subsequently, the 43S complex
Response of EIF2AK4 (GCN2) to amino acid deficiency
Major pathway of rRNA processing in the nucleolus and cytosol
rRNA processing in the nucleus and cytosol
rRNA processing
Eukaryotic Translation Initiation
Cap−dependent Translation Initiation
SRP−dependent cotranslational protein targeting to membrane
Nonsense−Mediated Decay (NMD)
Nonsense Mediated Decay (NMD) enhanced by the Exon Junction Complex (EJC
RNA
meth

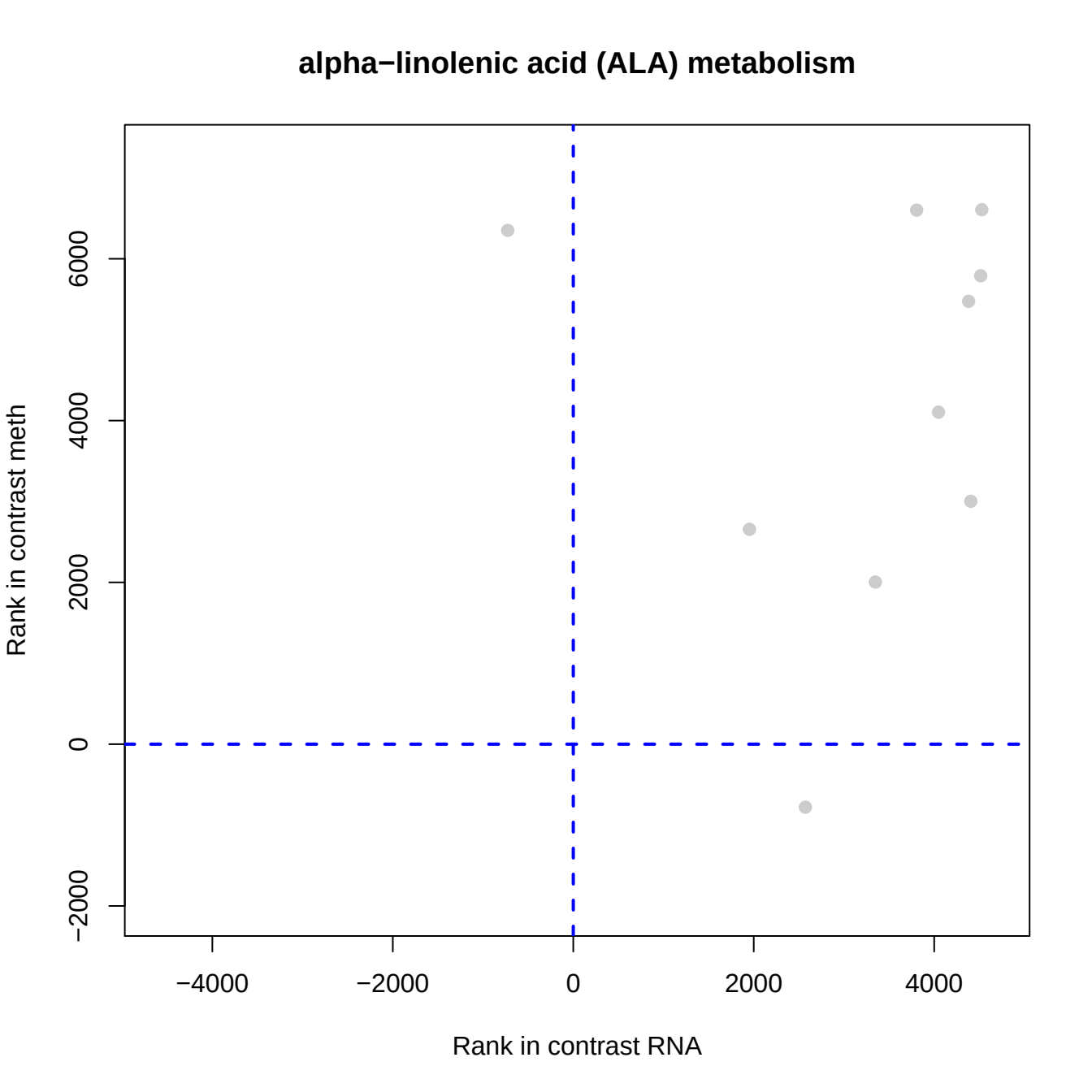

effect size versus statistical significance
−log(p.adjustMANOVA) (significance)
0
20
40
60
80
0.0
0.2
0.4
0.6
0.8
s.dist (effect size)

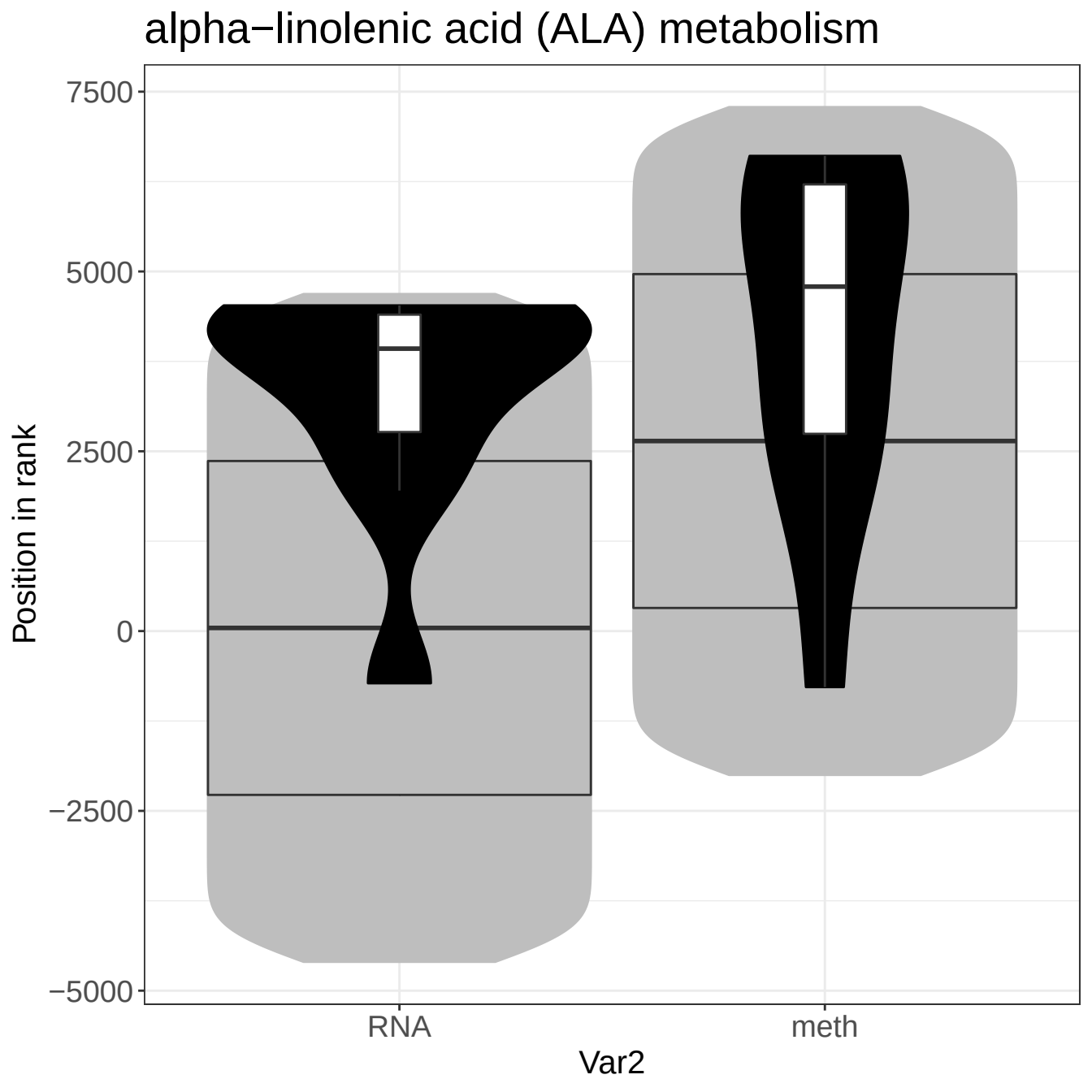

alpha−linolenic (omega3) and linoleic (omega6) acid metab
6000
4000
2000
0
−2000
Rank in contrast meth
−4000
−2000
0
2000
4000
Rank in contrast RNA
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

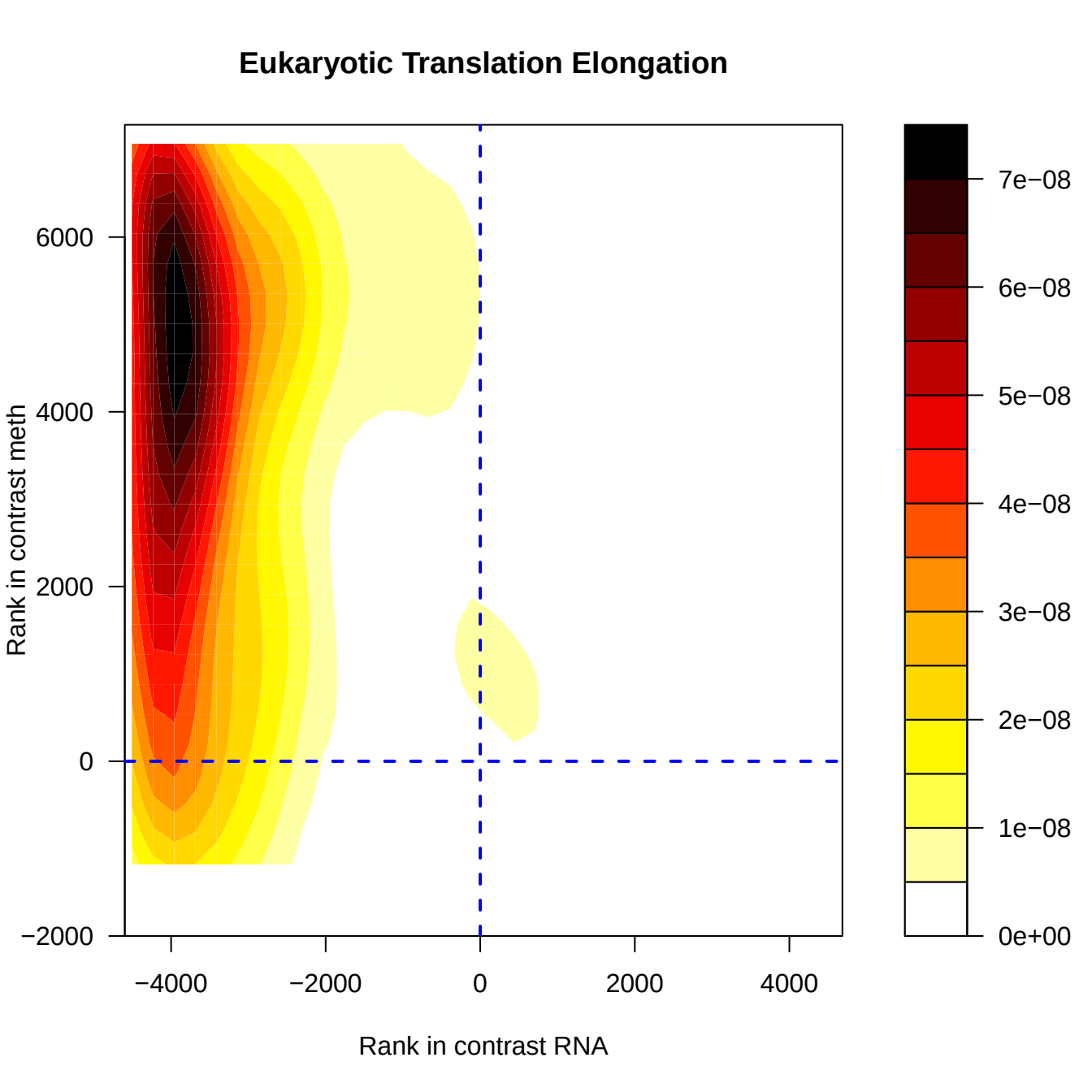

alpha−linolenic (omega3) and linoleic (omega6) acid metabolism
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

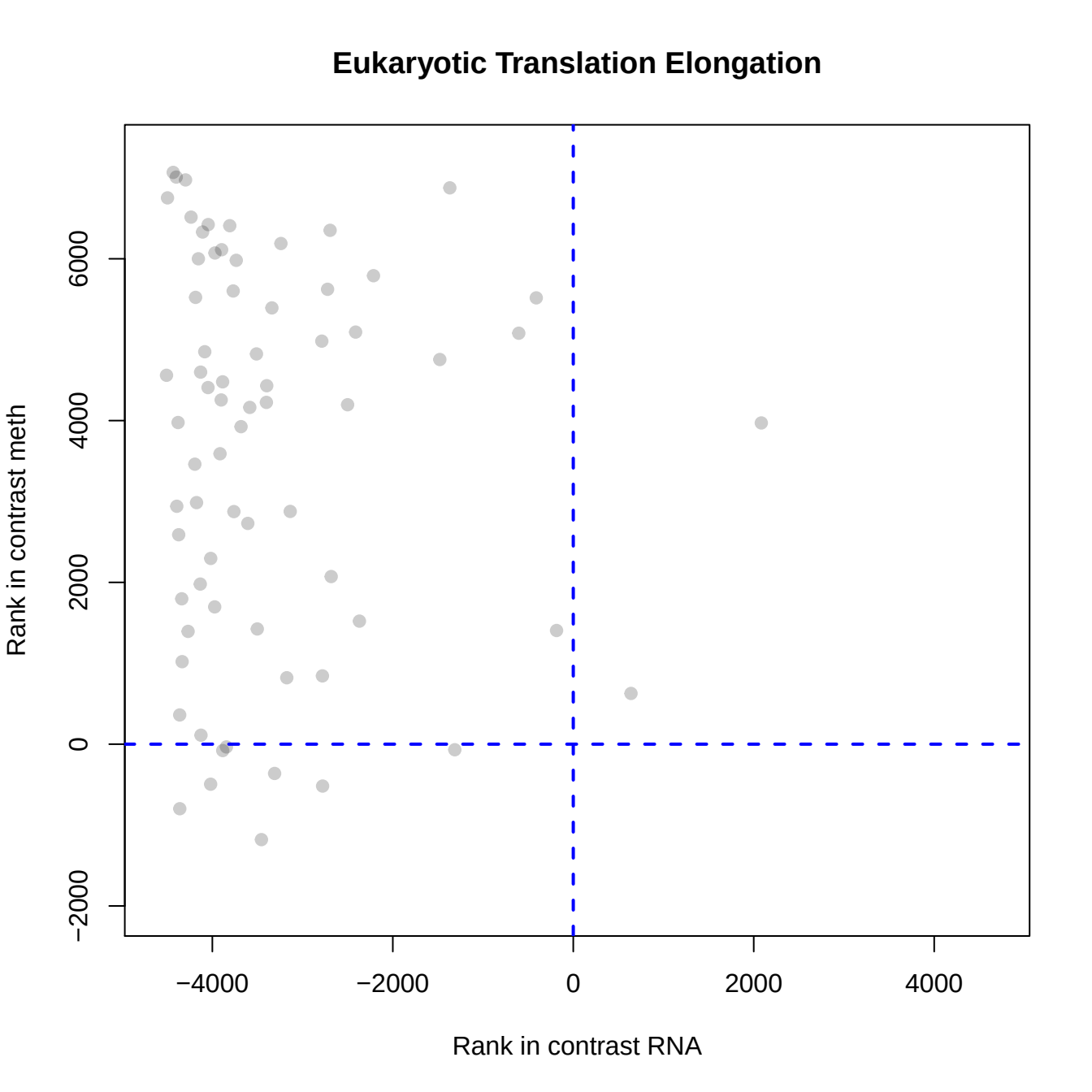

alpha−linolenic (omega3) and linoleic (omega6) a
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

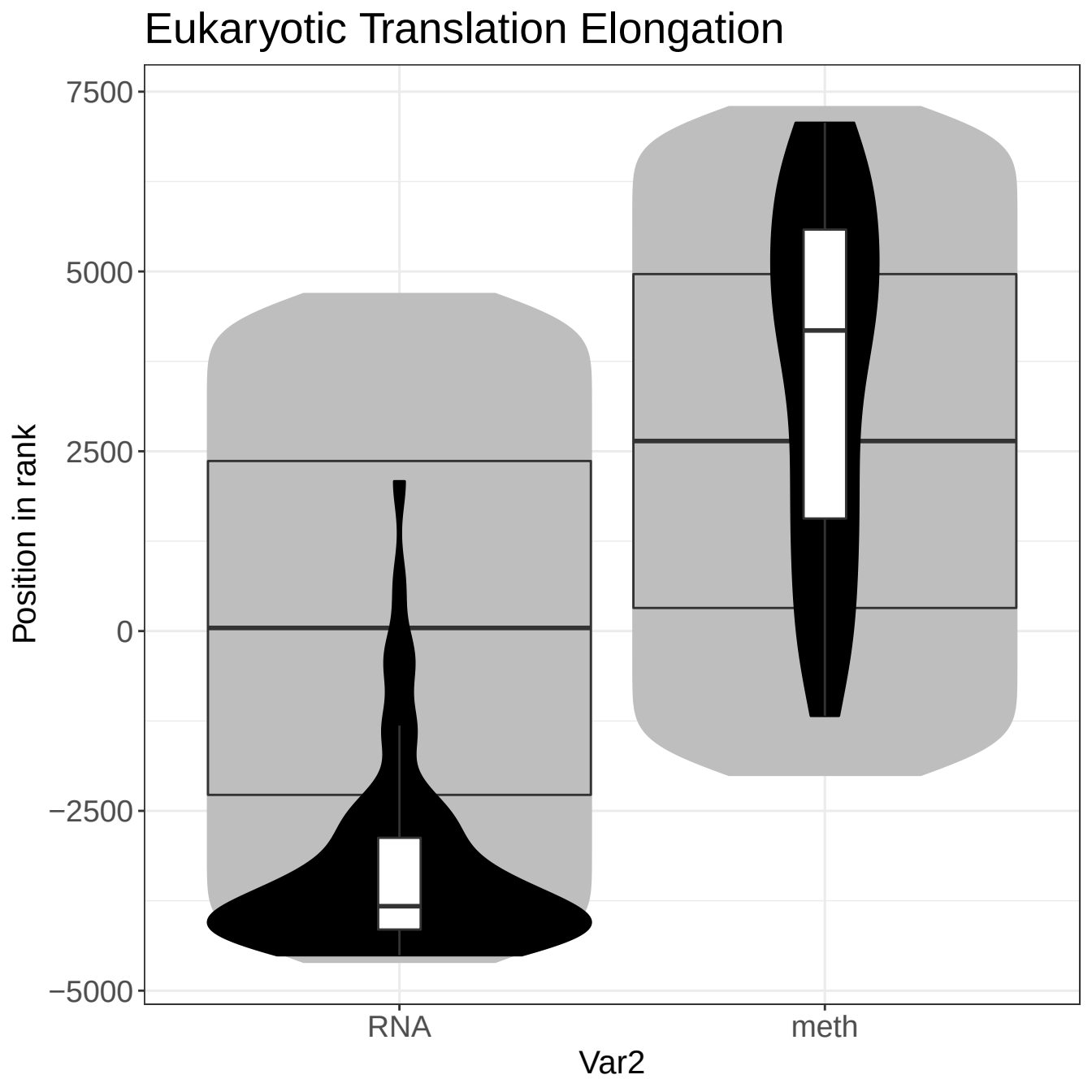

alpha−linolenic acid (ALA) metabolism
6000
4000
2000
0
−2000
Rank in contrast meth
−4000
−2000
0
2000
4000
Rank in contrast RNA
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

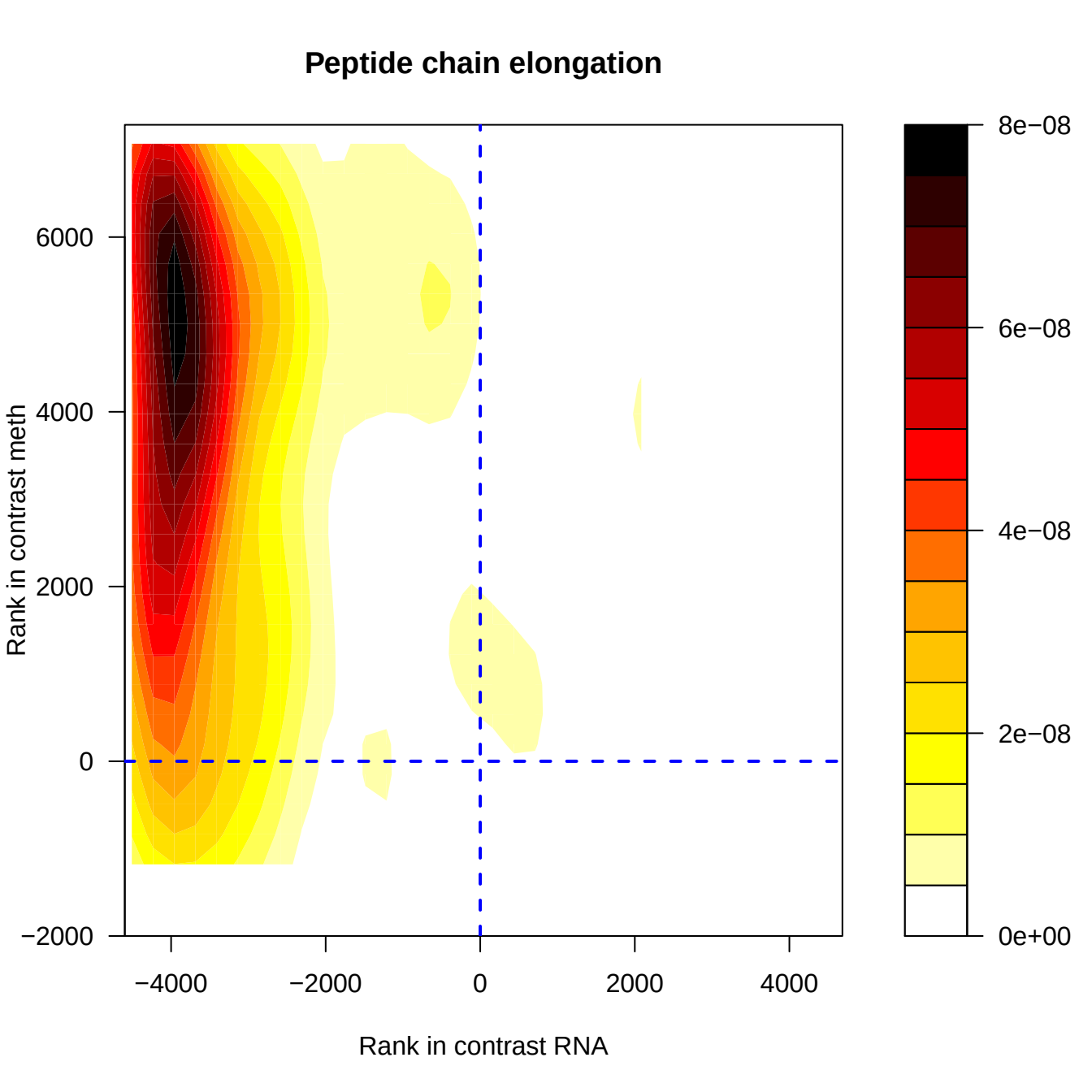

alpha−linolenic acid (ALA) metabolism
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

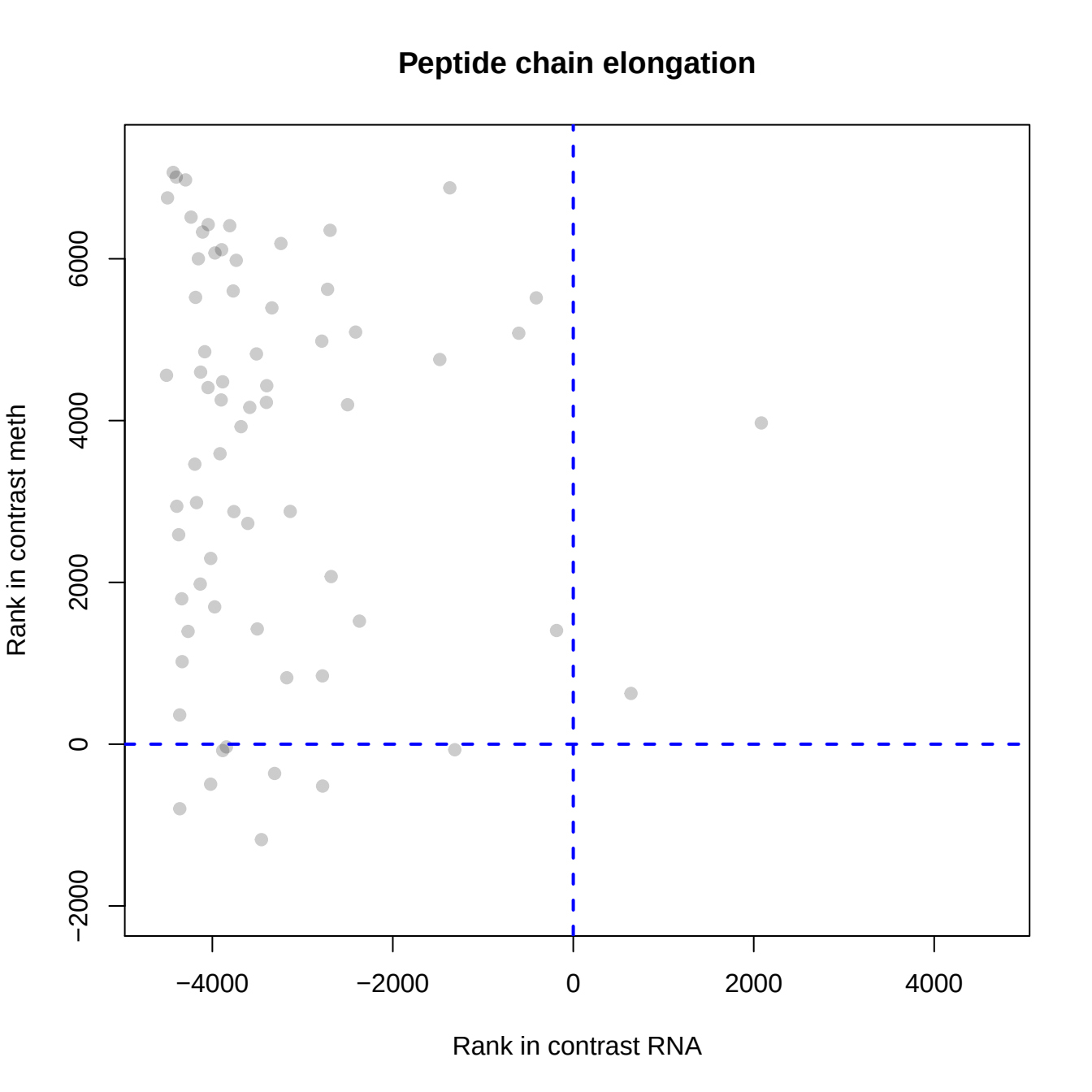

alpha−linolenic acid (ALA) metabolism
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

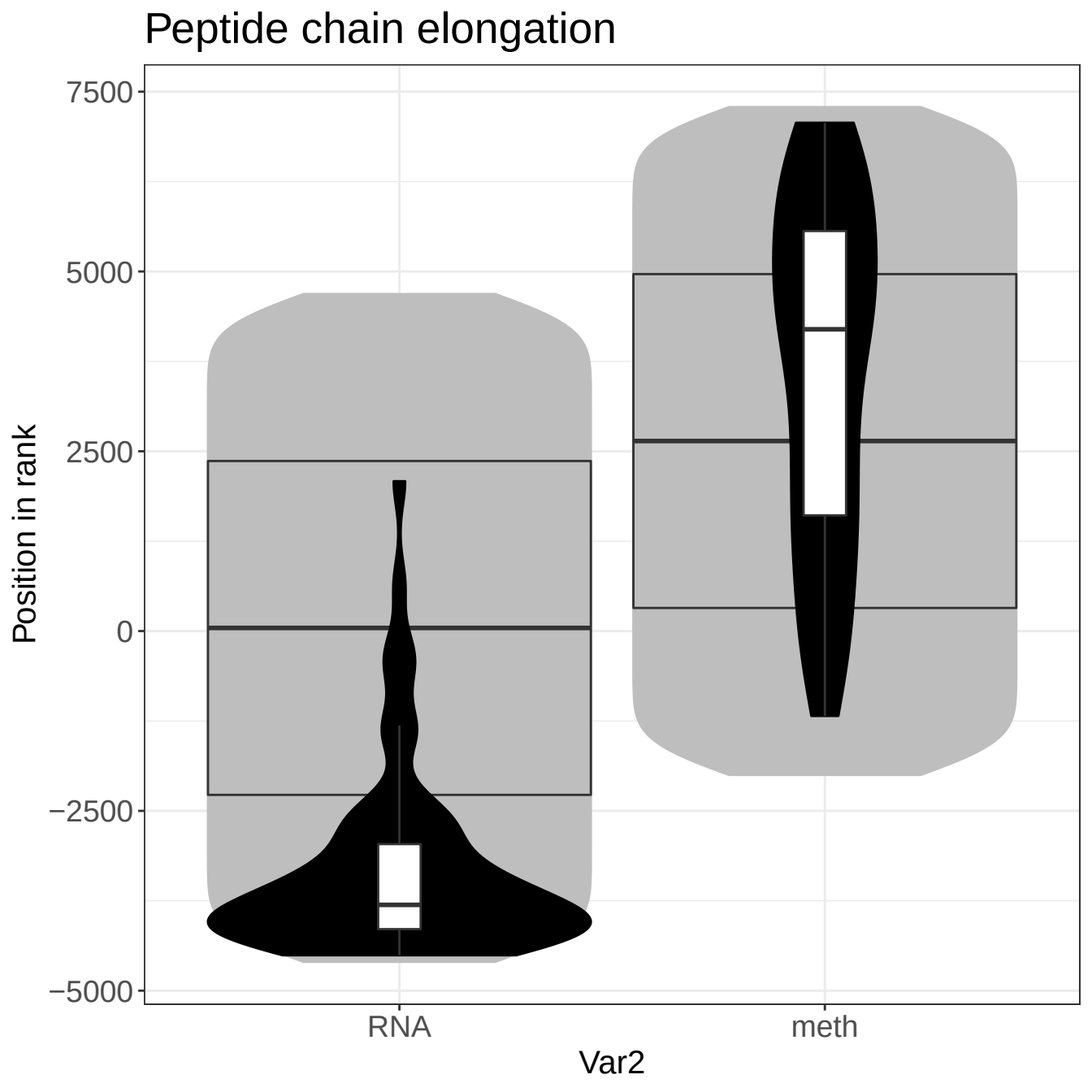

Eukaryotic Translation Elongation
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
7e−08
6e−08
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

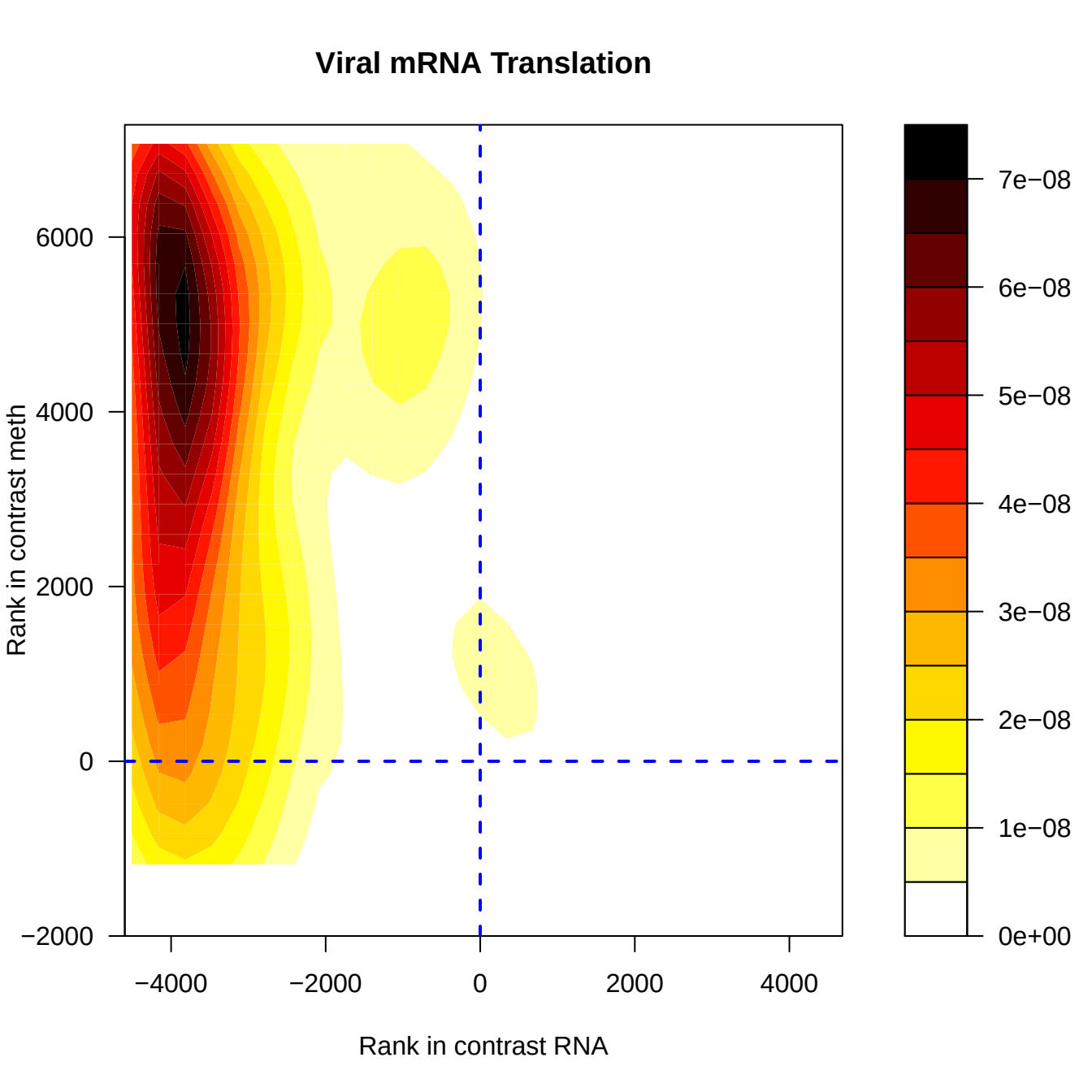

Eukaryotic Translation Elongation
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

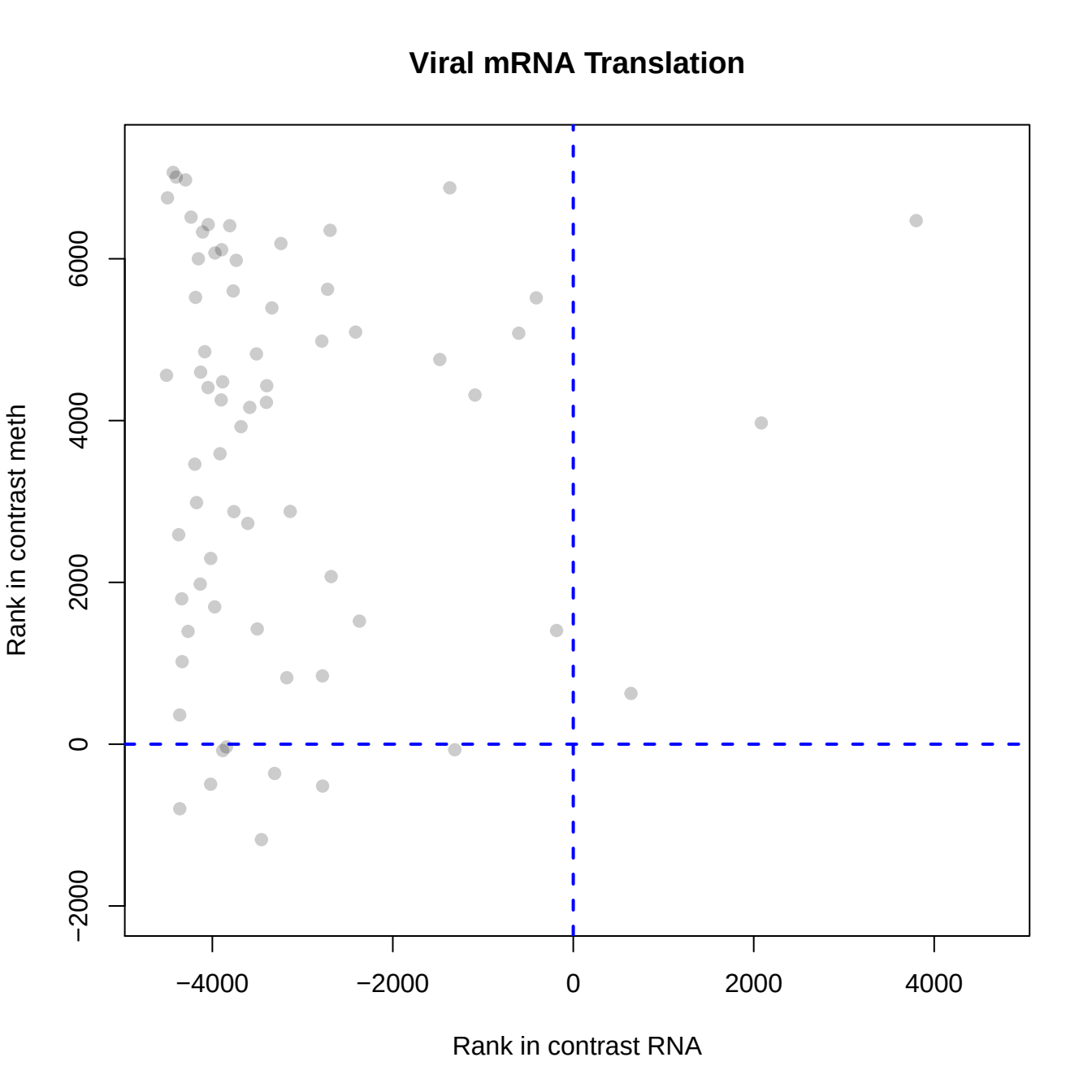

Eukaryotic Translation Elongation
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

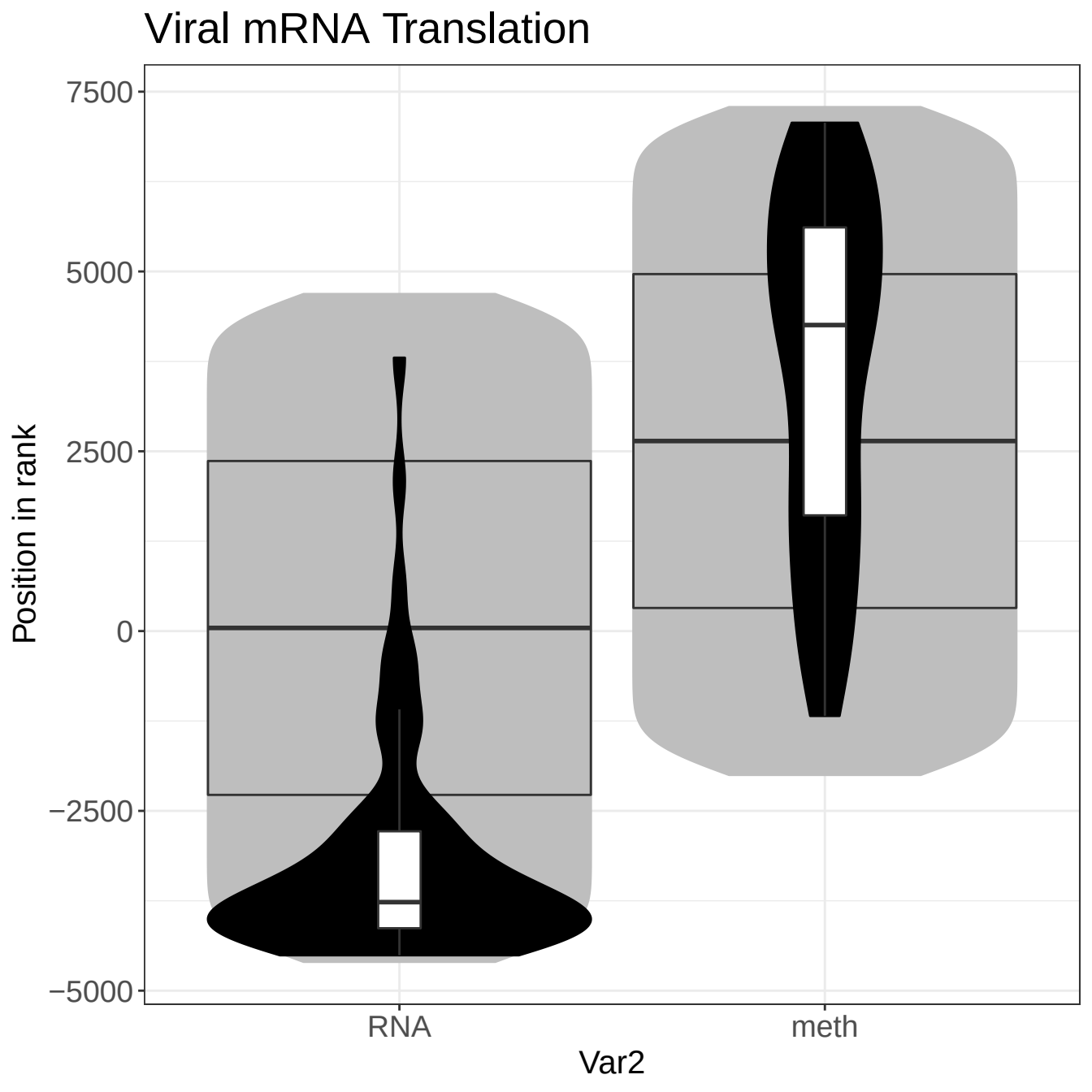

Peptide chain elongation
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
8e−08
6e−08
4e−08
2e−08
0e+00

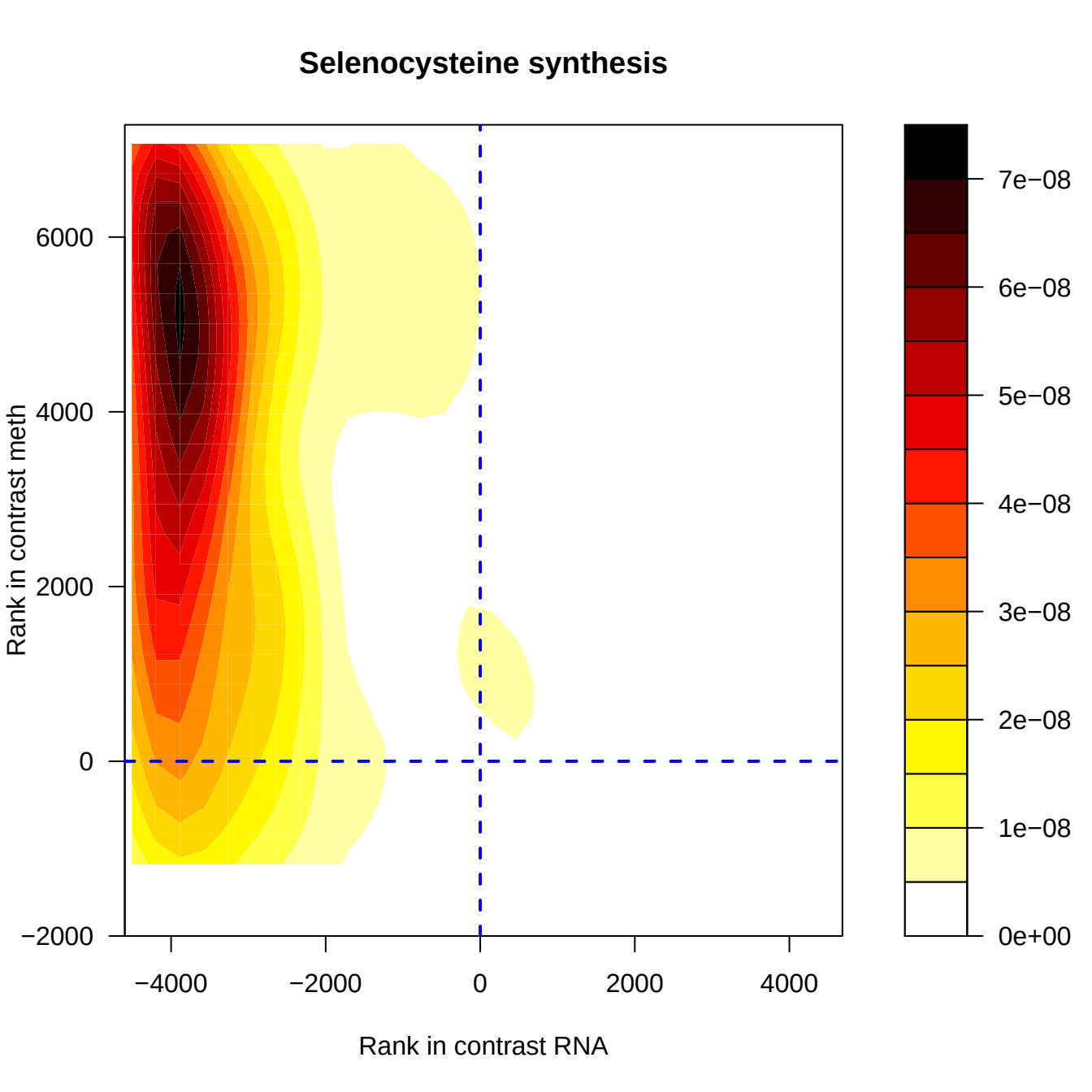

Peptide chain elongation
Rank in contrast meth
Rank in contrast RNA
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000

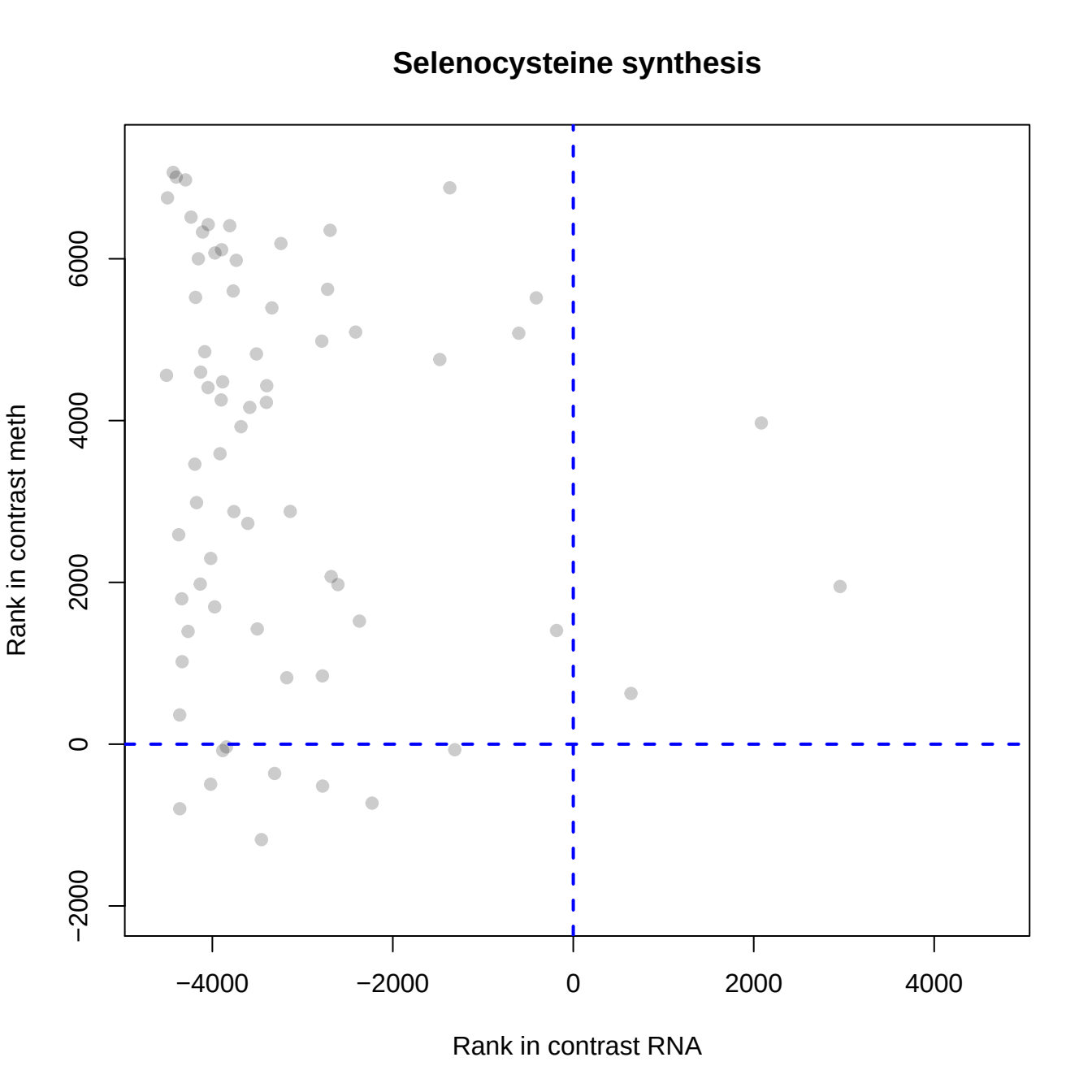

Peptide chain elongation
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

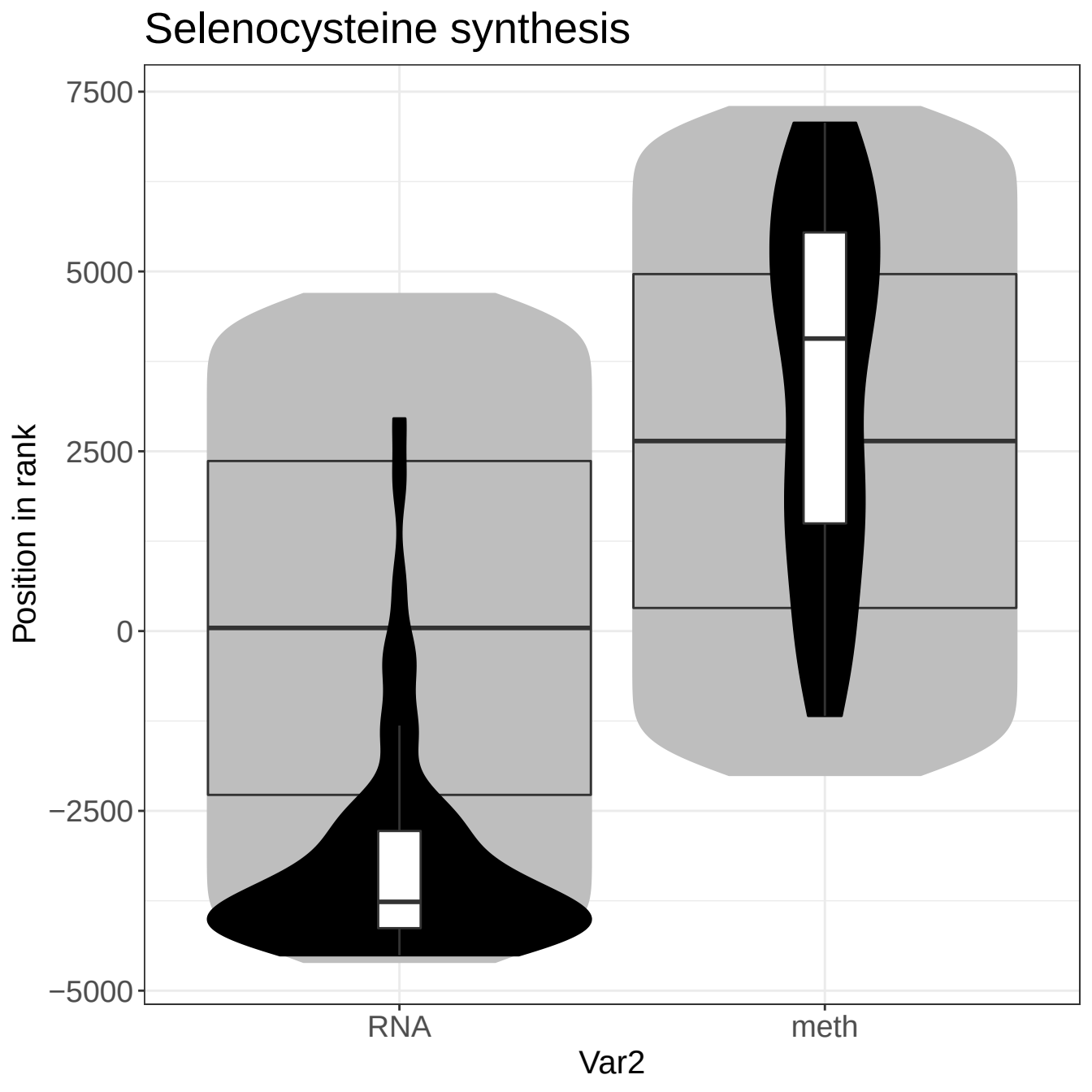

Viral mRNA Translation
6000
4000
2000
0
−2000
Rank in contrast meth
−4000
−2000
0
2000
4000
Rank in contrast RNA
7e−08
6e−08
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

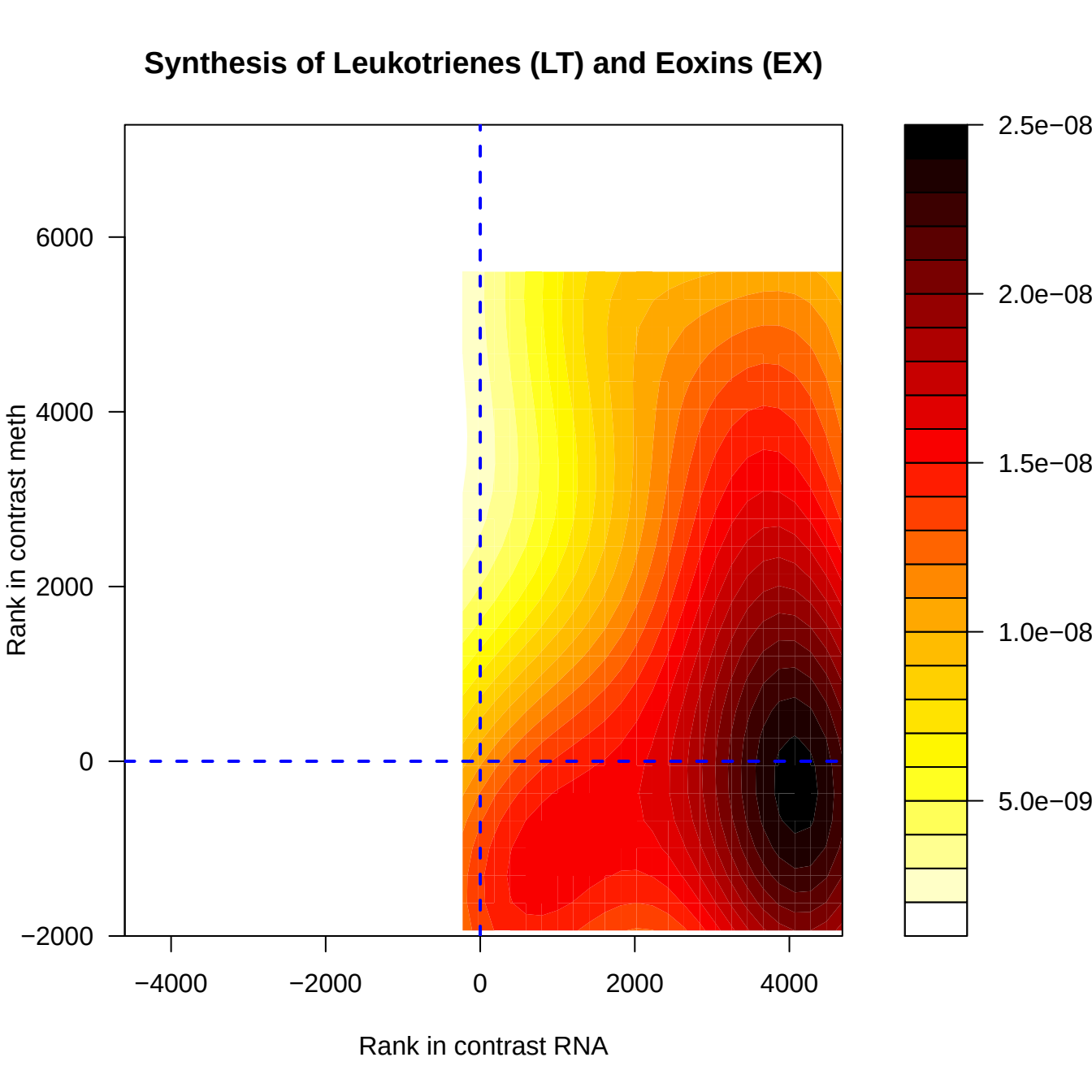

Viral mRNA Translation
Rank in contrast meth
Rank in contrast RNA
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000

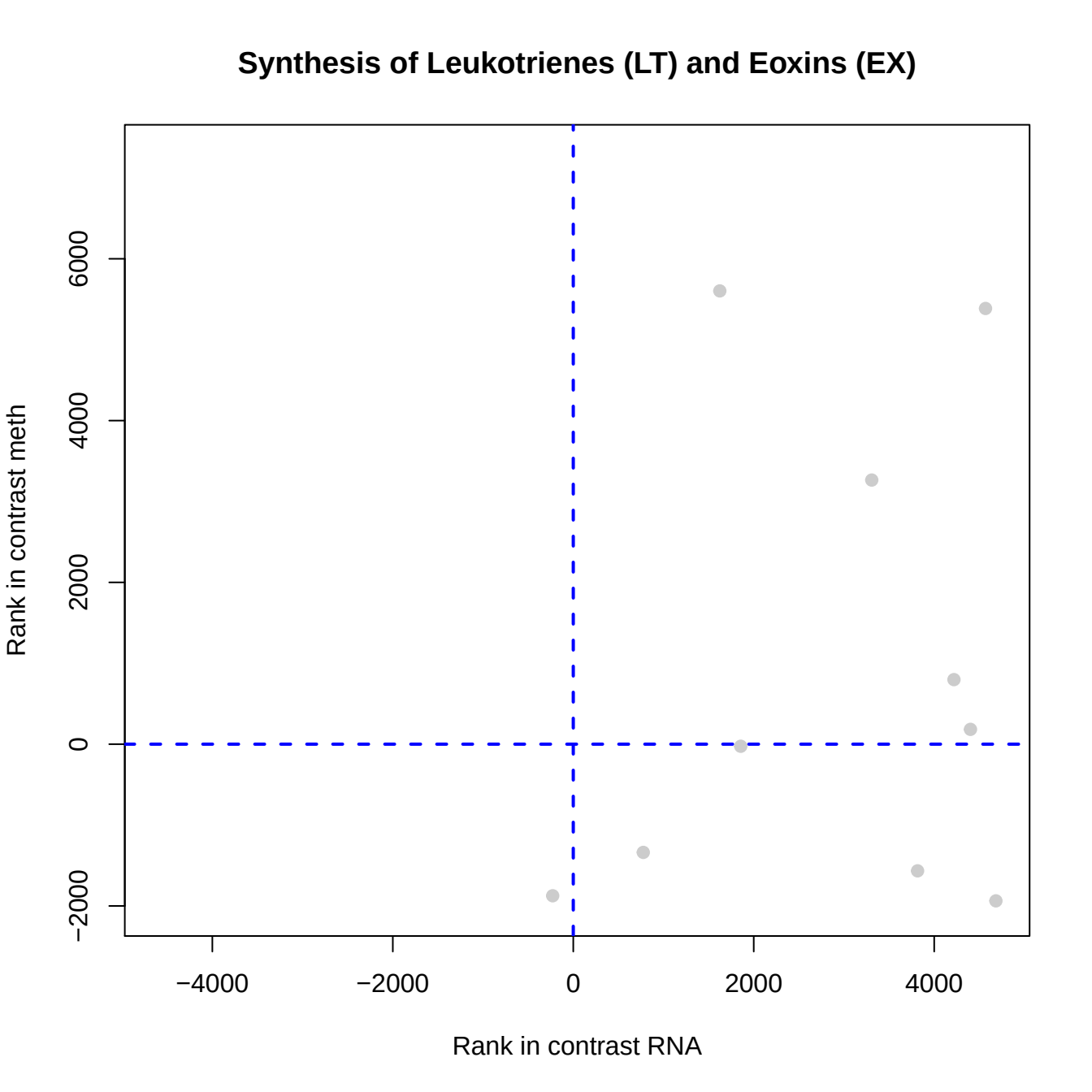

Viral mRNA Translation
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

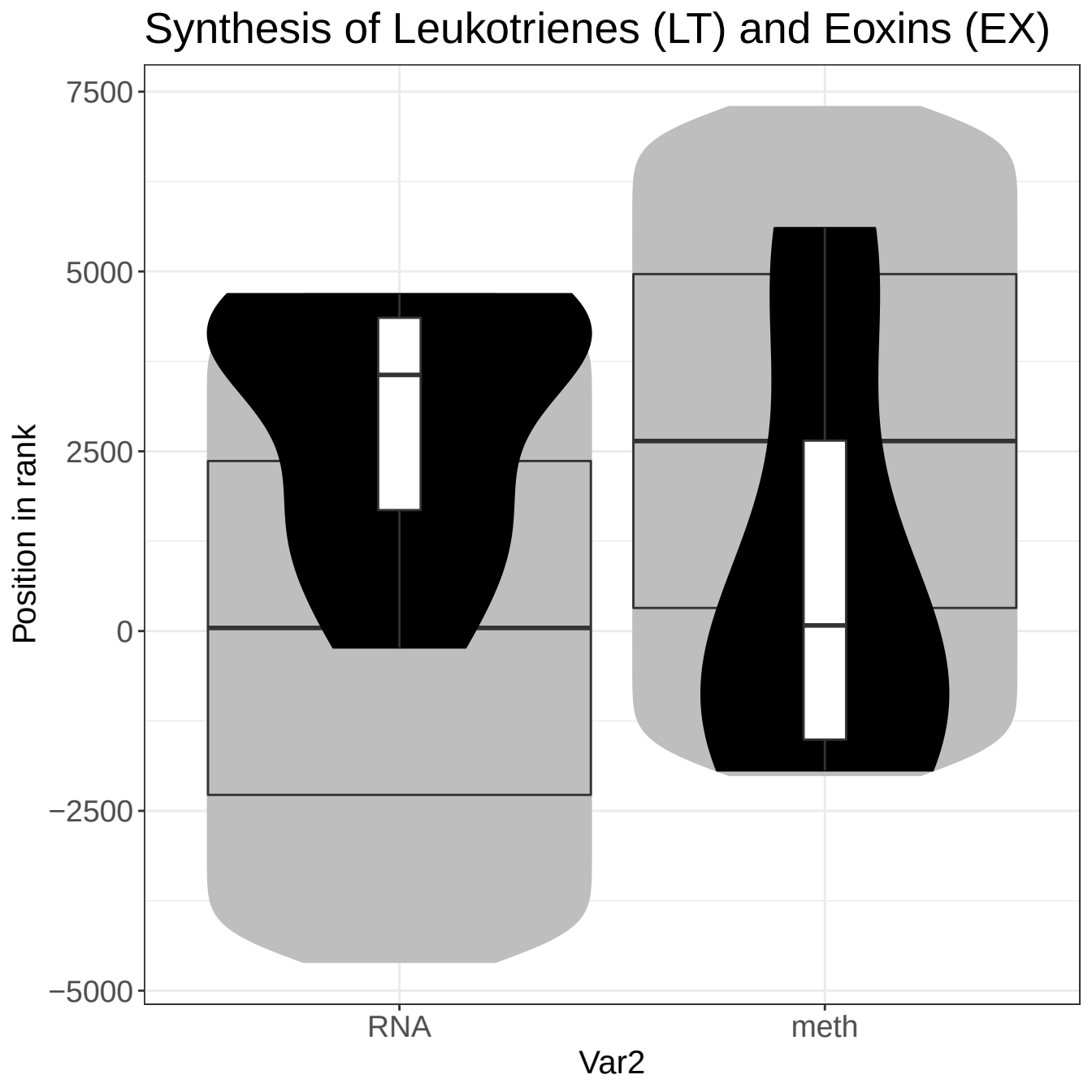

Selenocysteine synthesis
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
7e−08
6e−08
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

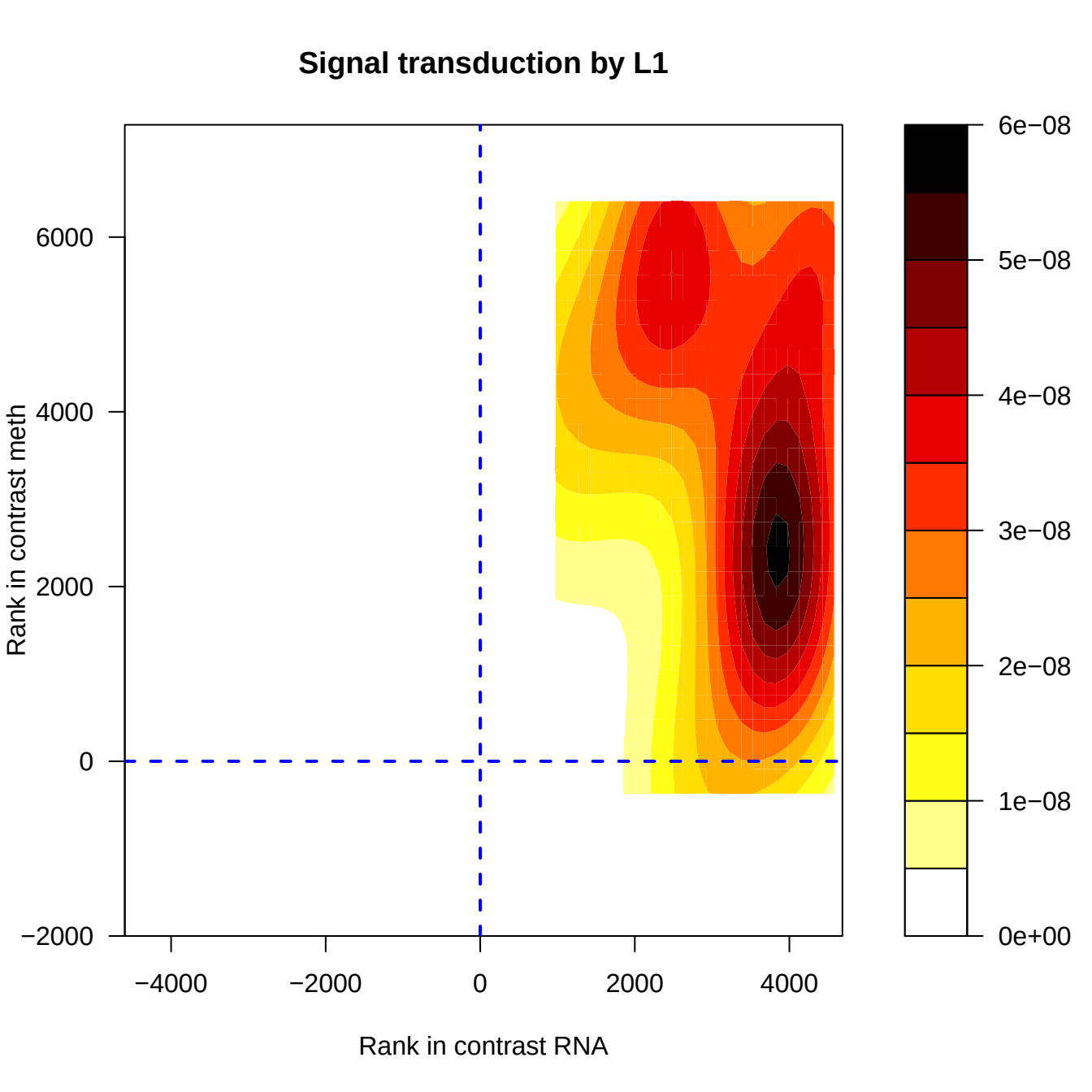

Selenocysteine synthesis
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

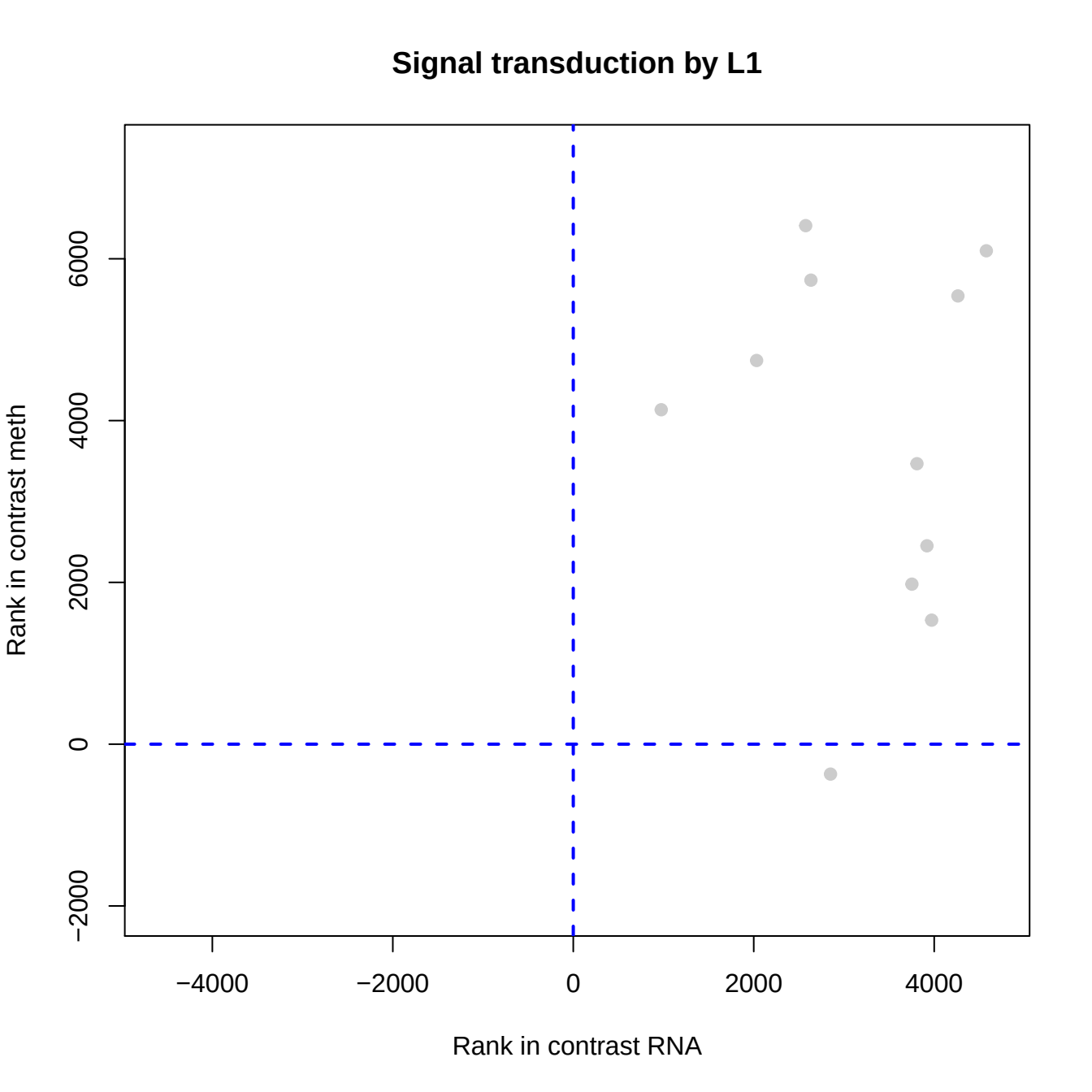

Selenocysteine synthesis
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

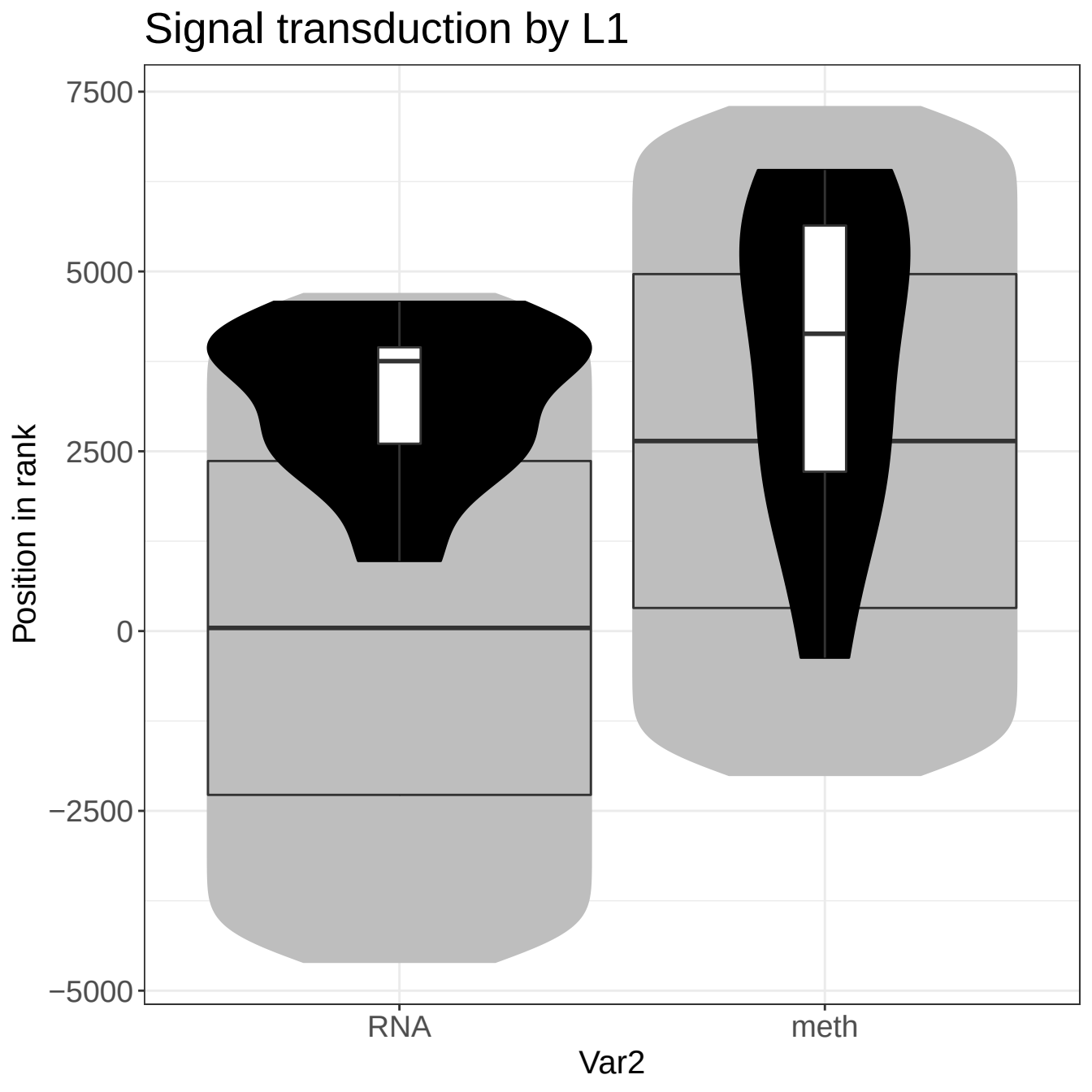

Synthesis of Leukotrienes (LT) and Eoxins (EX)
6000
4000
2000
0
−2000
Rank in contrast meth
−4000
−2000
0
2000
4000
Rank in contrast RNA
2.5e−08
2.0e−08
1.5e−08
1.0e−08
5.0e−09

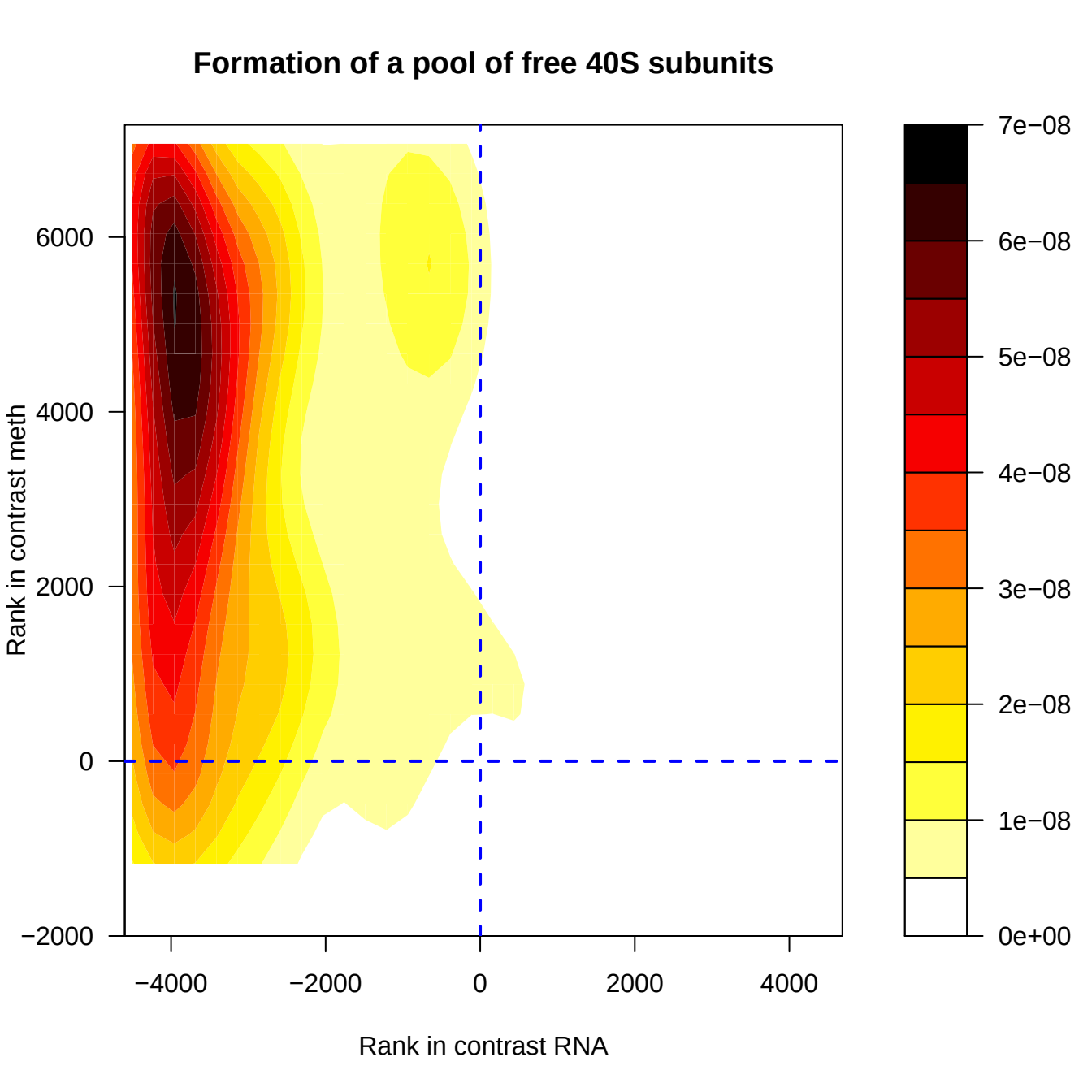

Synthesis of Leukotrienes (LT) and Eoxins (EX)
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

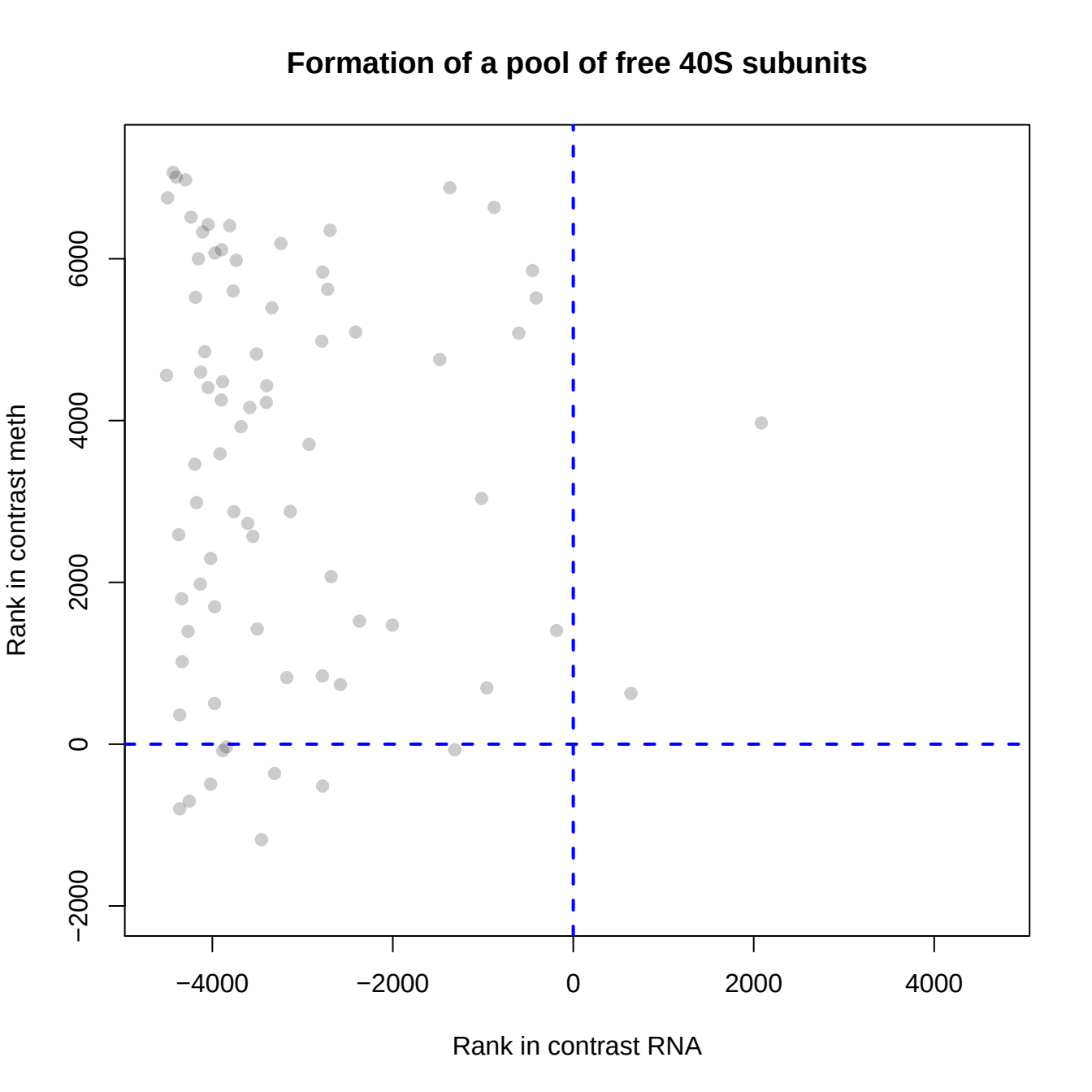

Synthesis of Leukotrienes (LT) and Eoxins (EX)
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

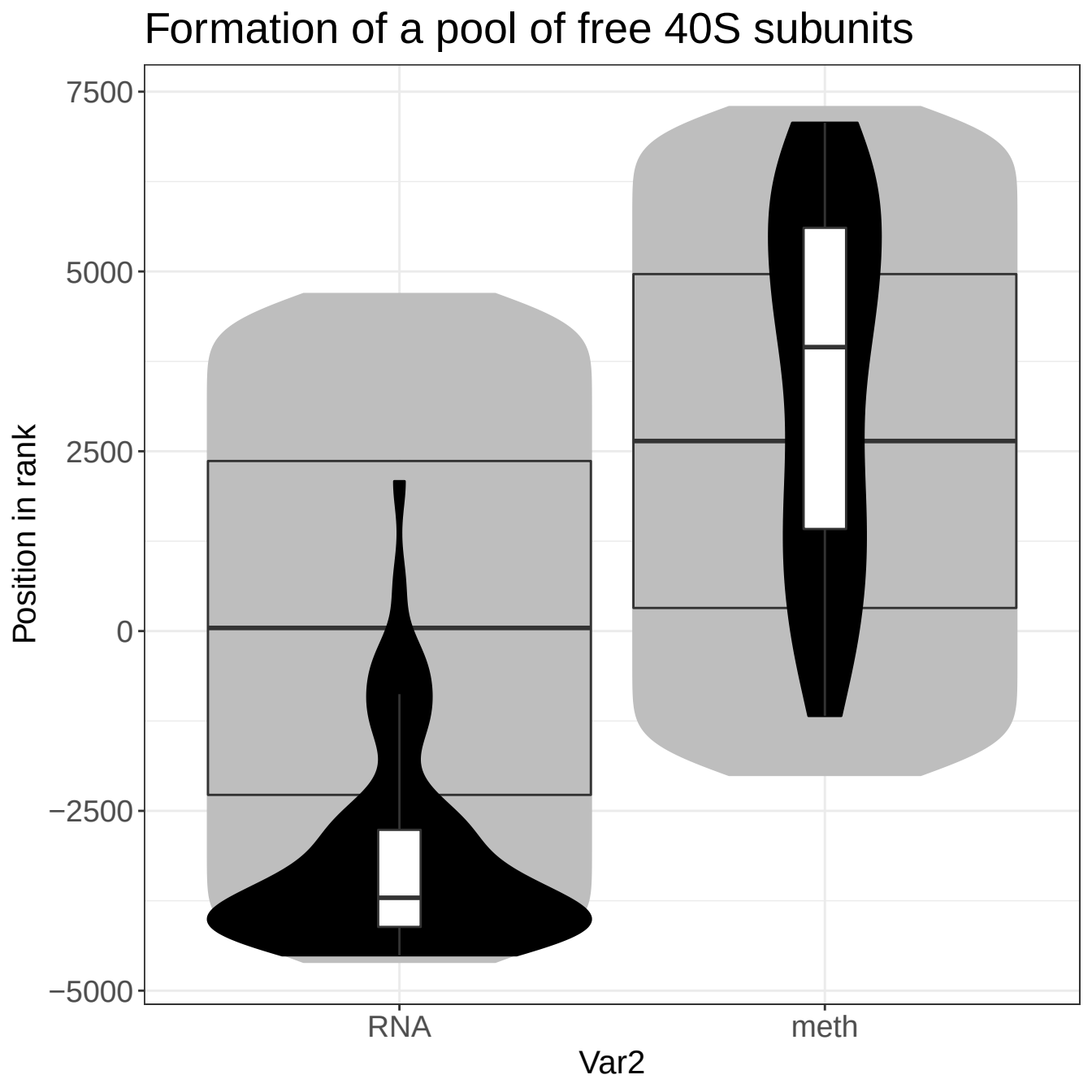

Signal transduction by L1
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
6e−08
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

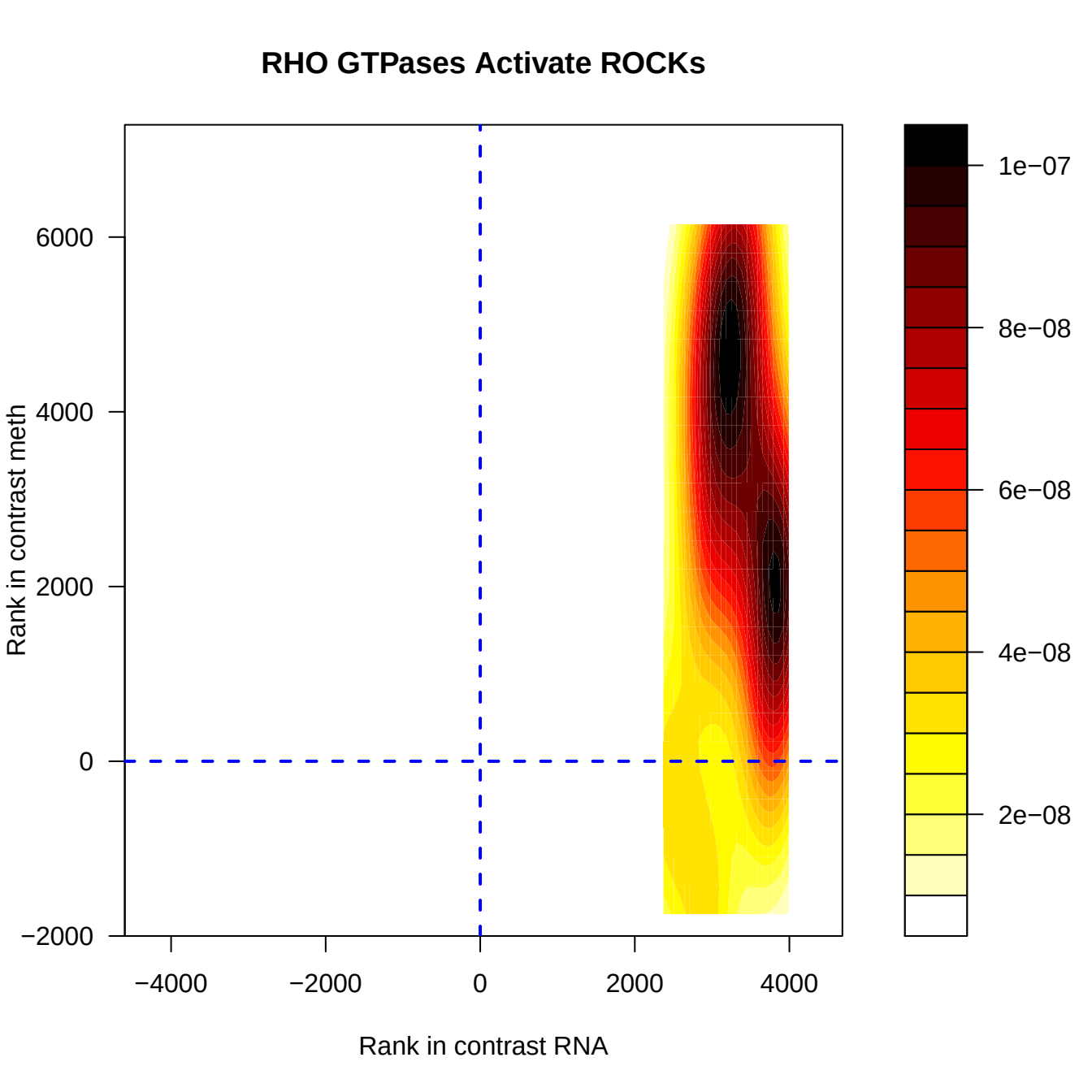

Signal transduction by L1
Rank in contrast meth
Rank in contrast RNA
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000

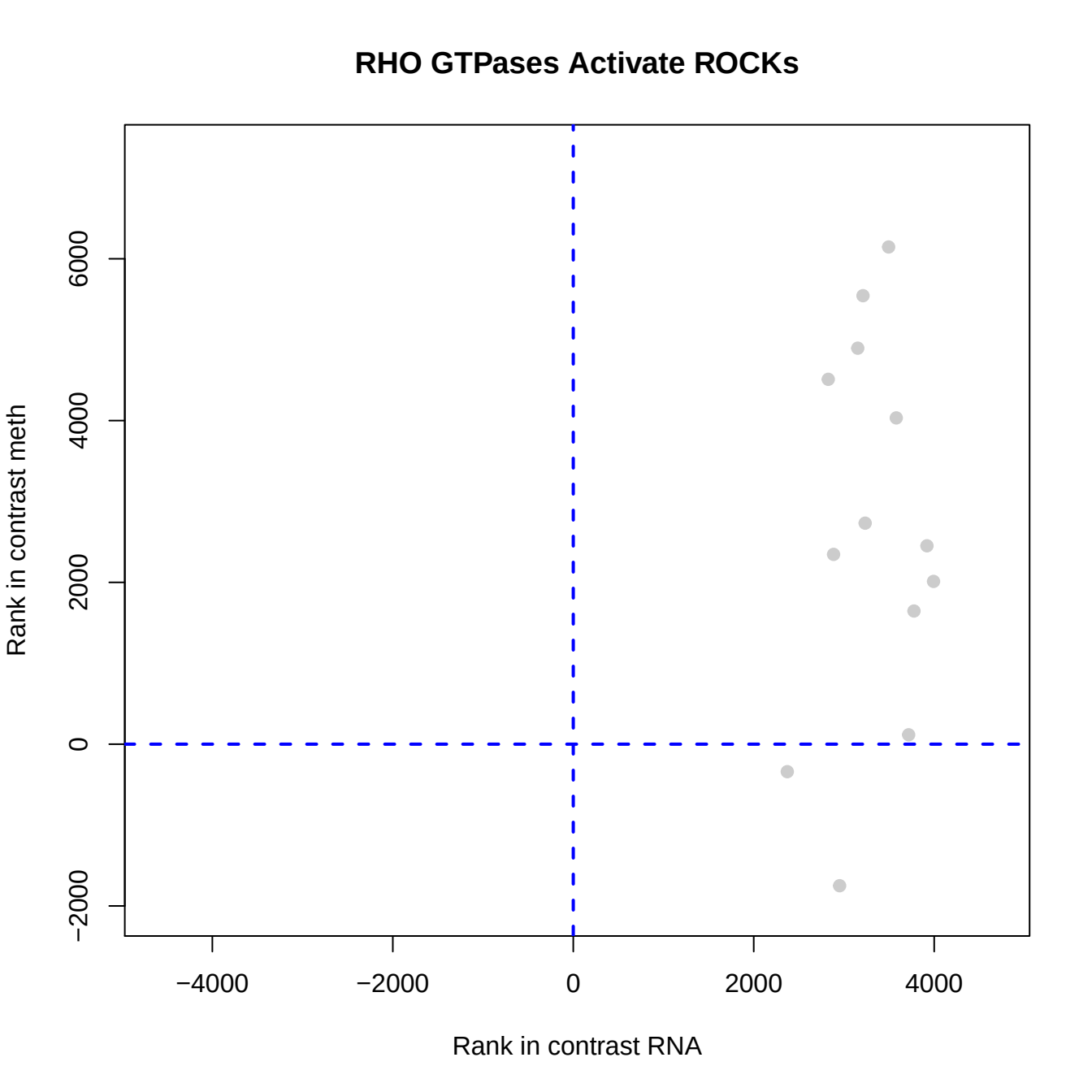

Signal transduction by L1
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

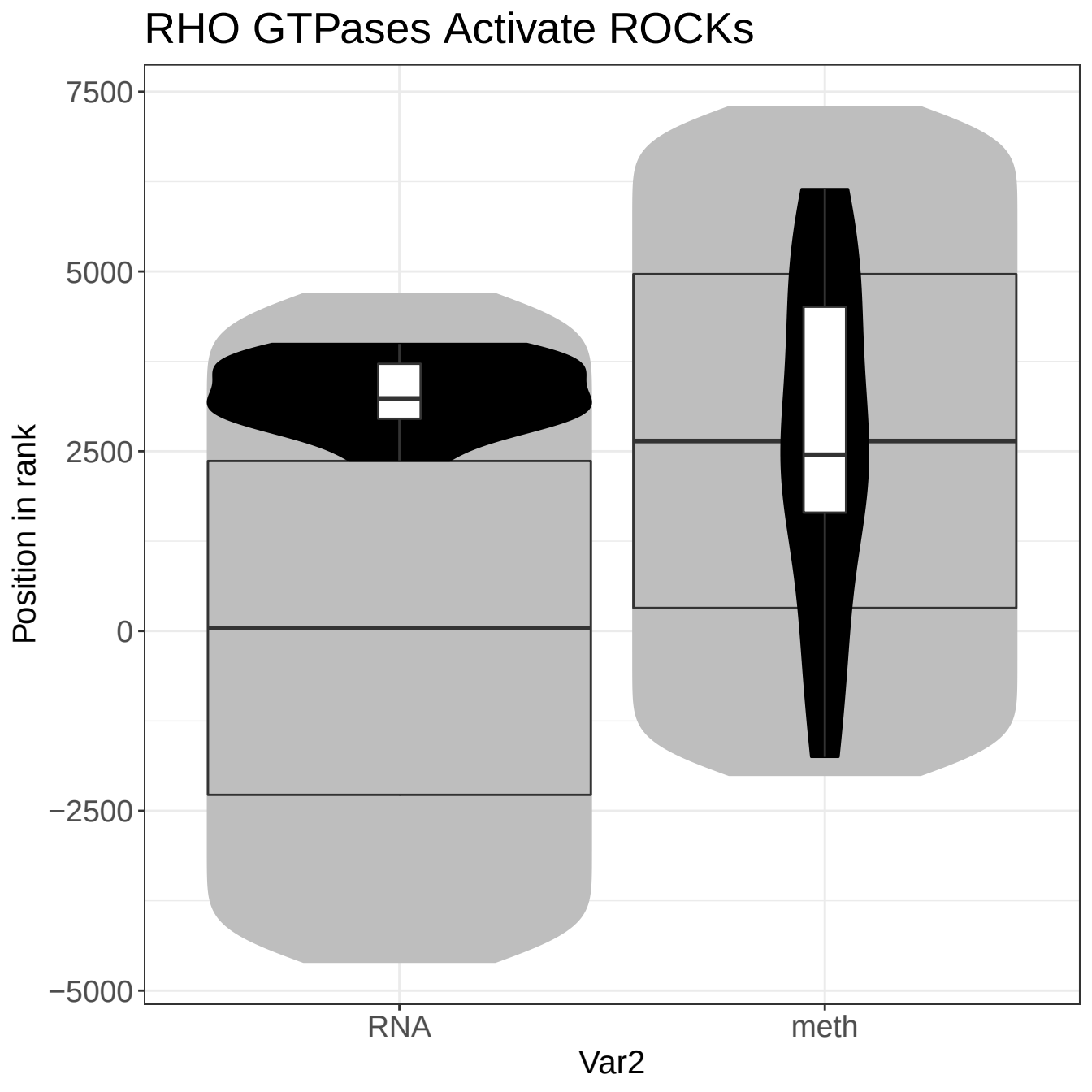

Formation of a pool of free 40S subunits
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
7e−08
6e−08
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

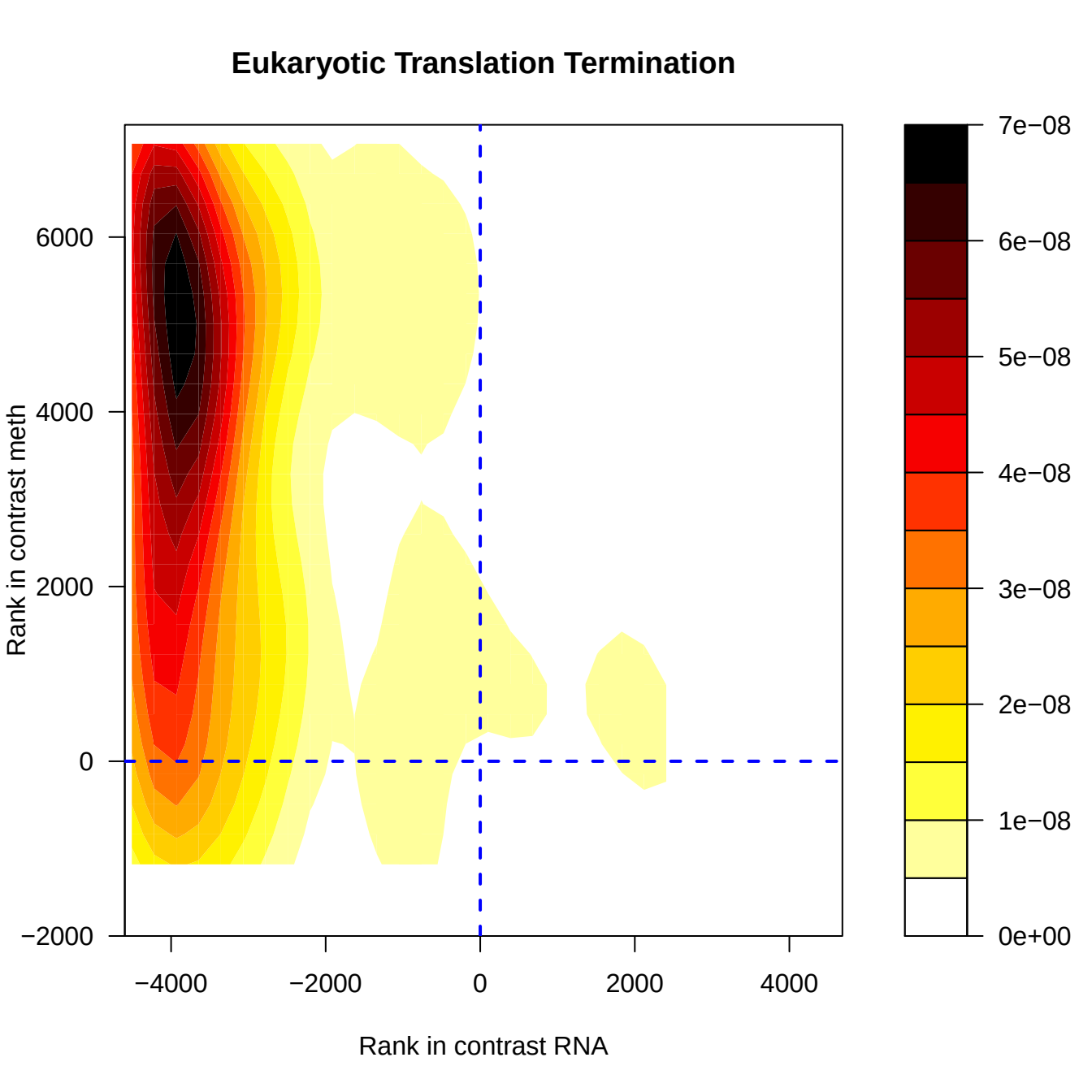

Formation of a pool of free 40S subunits
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

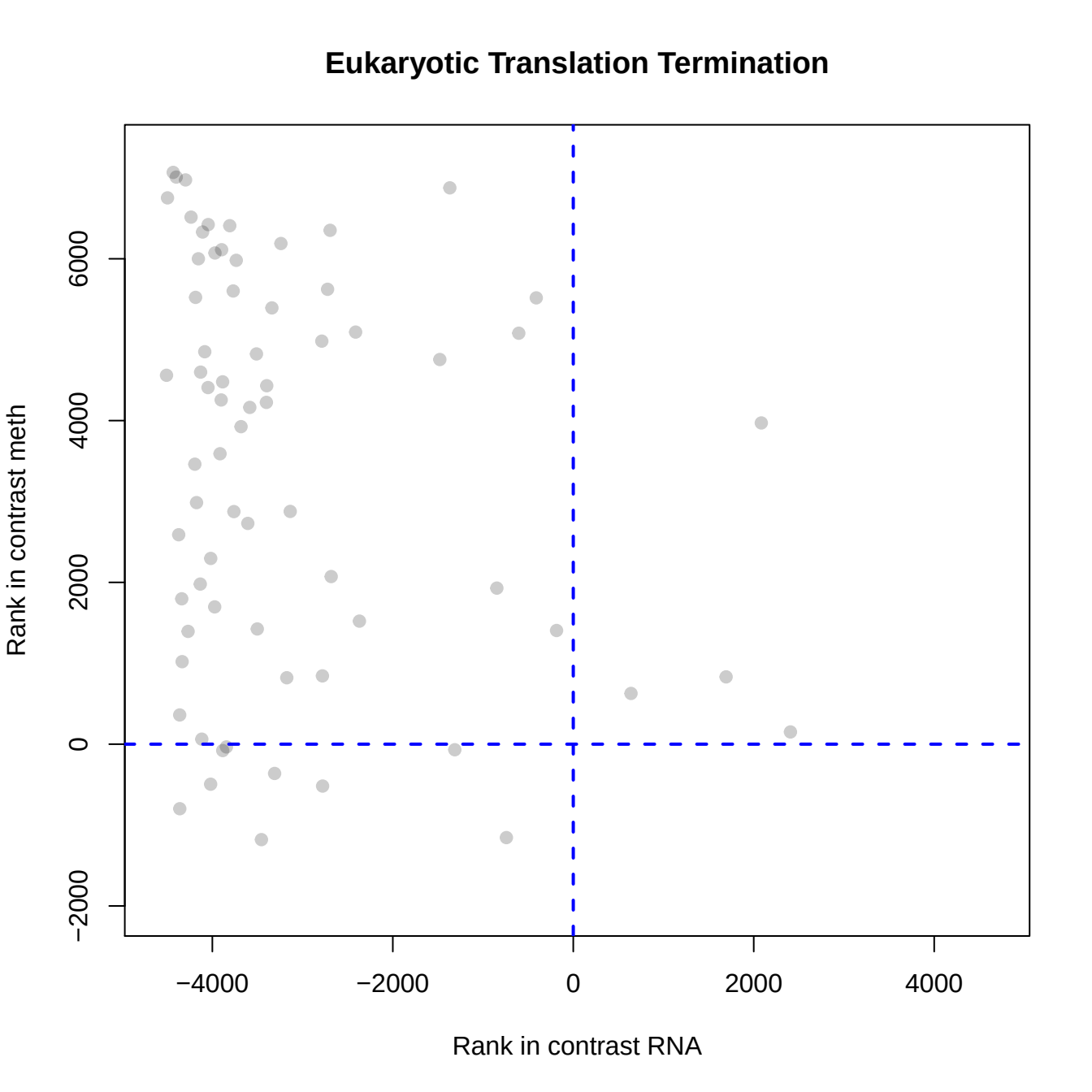

Formation of a pool of free 40S subunits
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

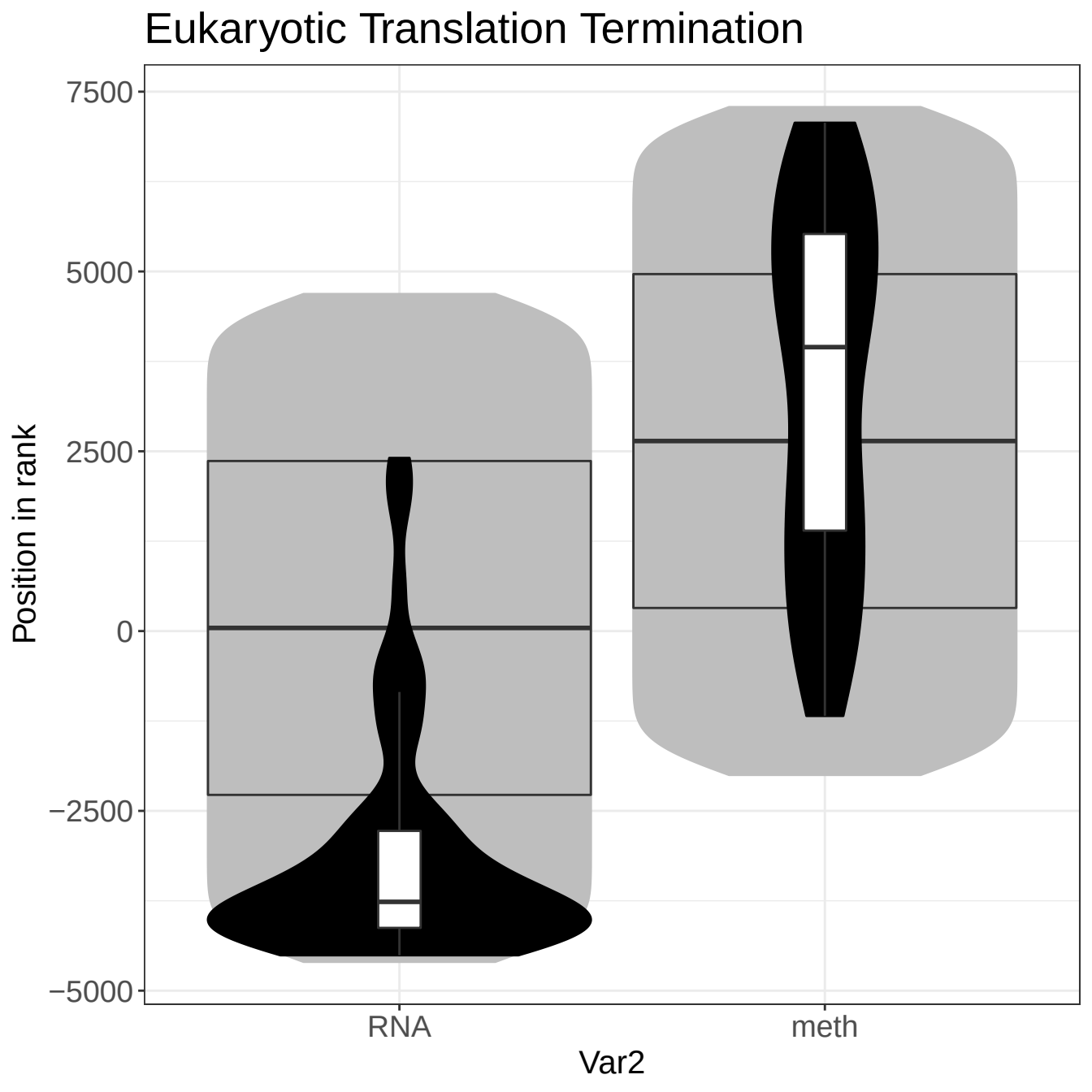

RHO GTPases Activate ROCKs
6000
4000
2000
0
−2000
Rank in contrast meth
−4000
−2000
0
2000
4000
Rank in contrast RNA
1e−07
8e−08
6e−08
4e−08
2e−08

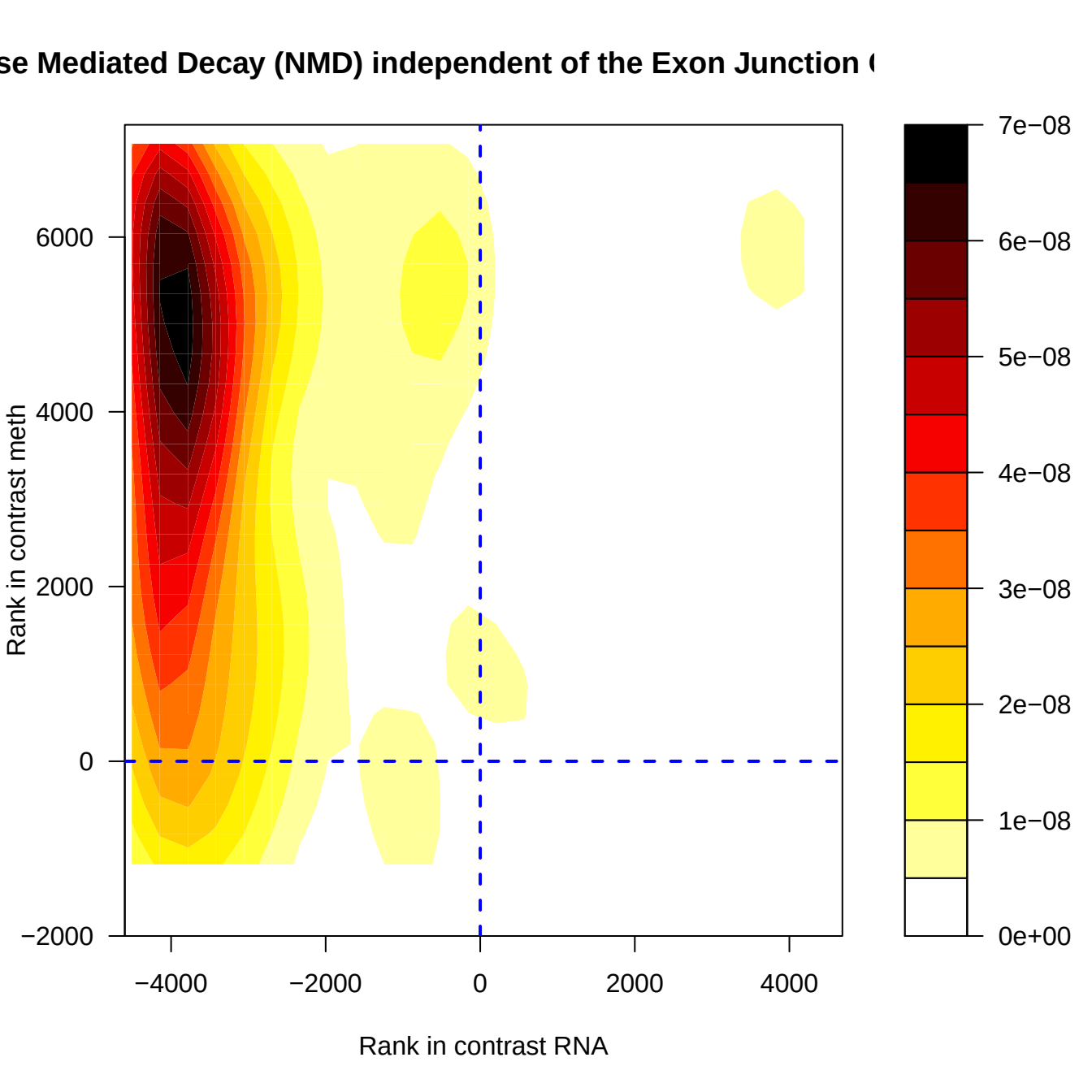

RHO GTPases Activate ROCKs
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

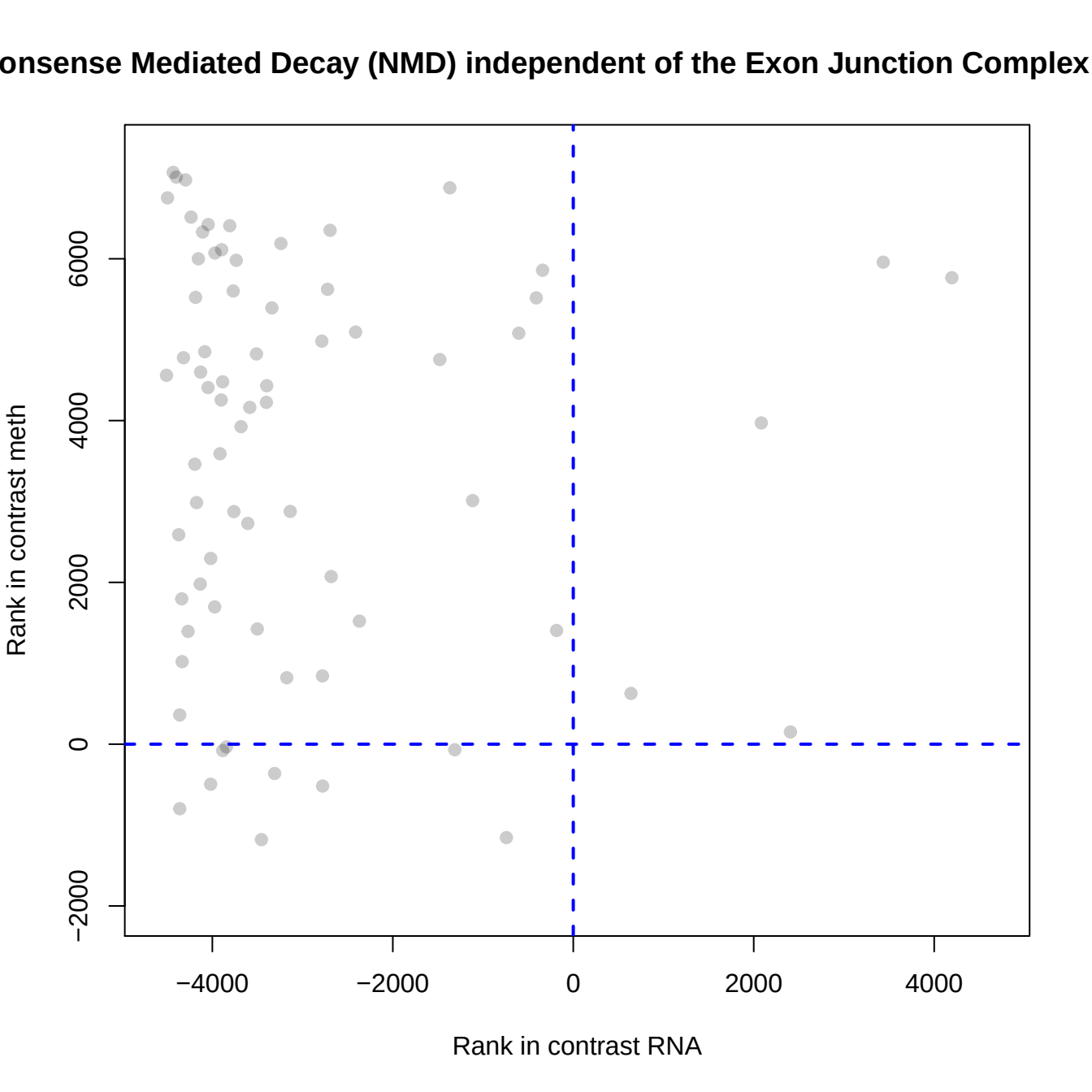

RHO GTPases Activate ROCKs
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

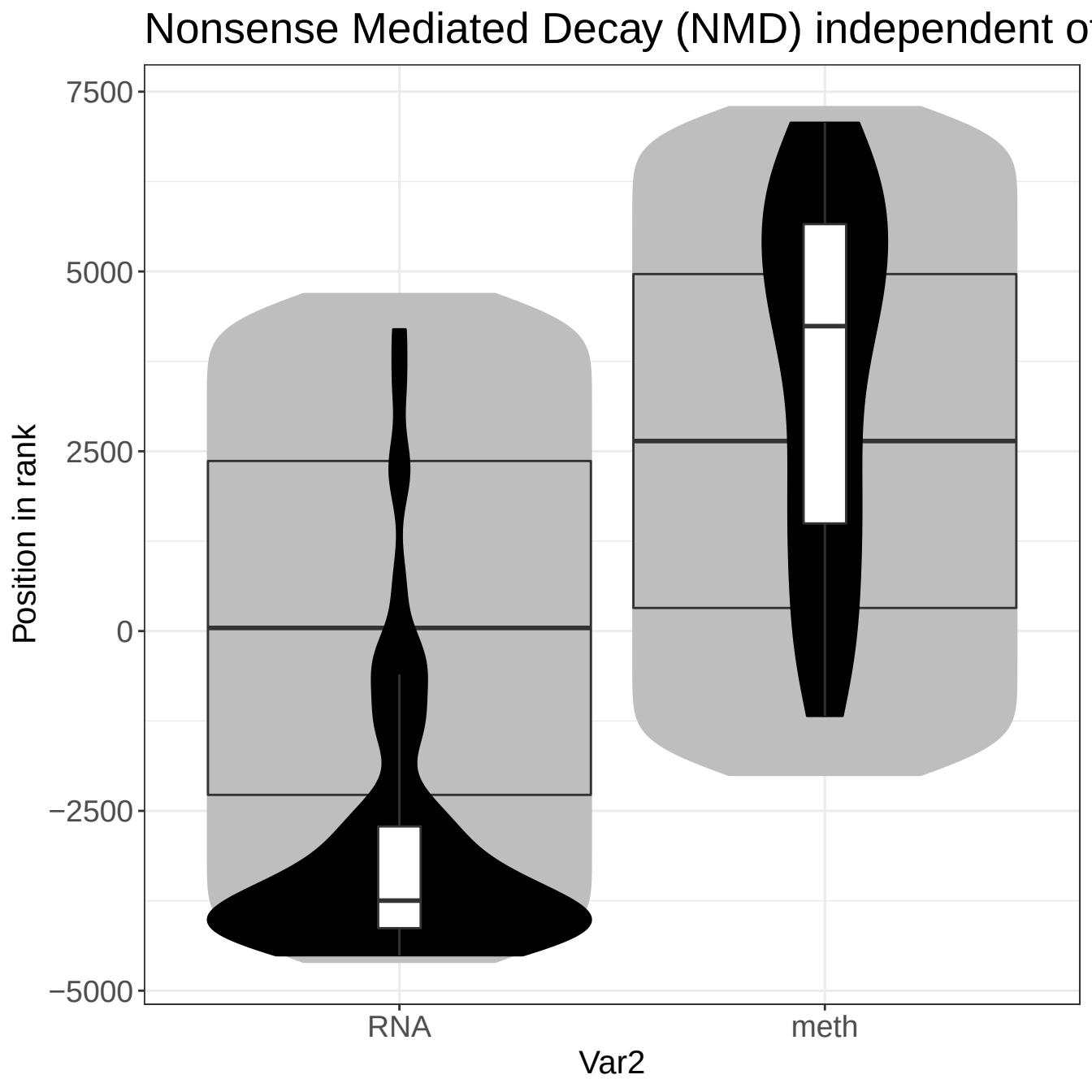

Eukaryotic Translation Termination
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
7e−08
6e−08
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

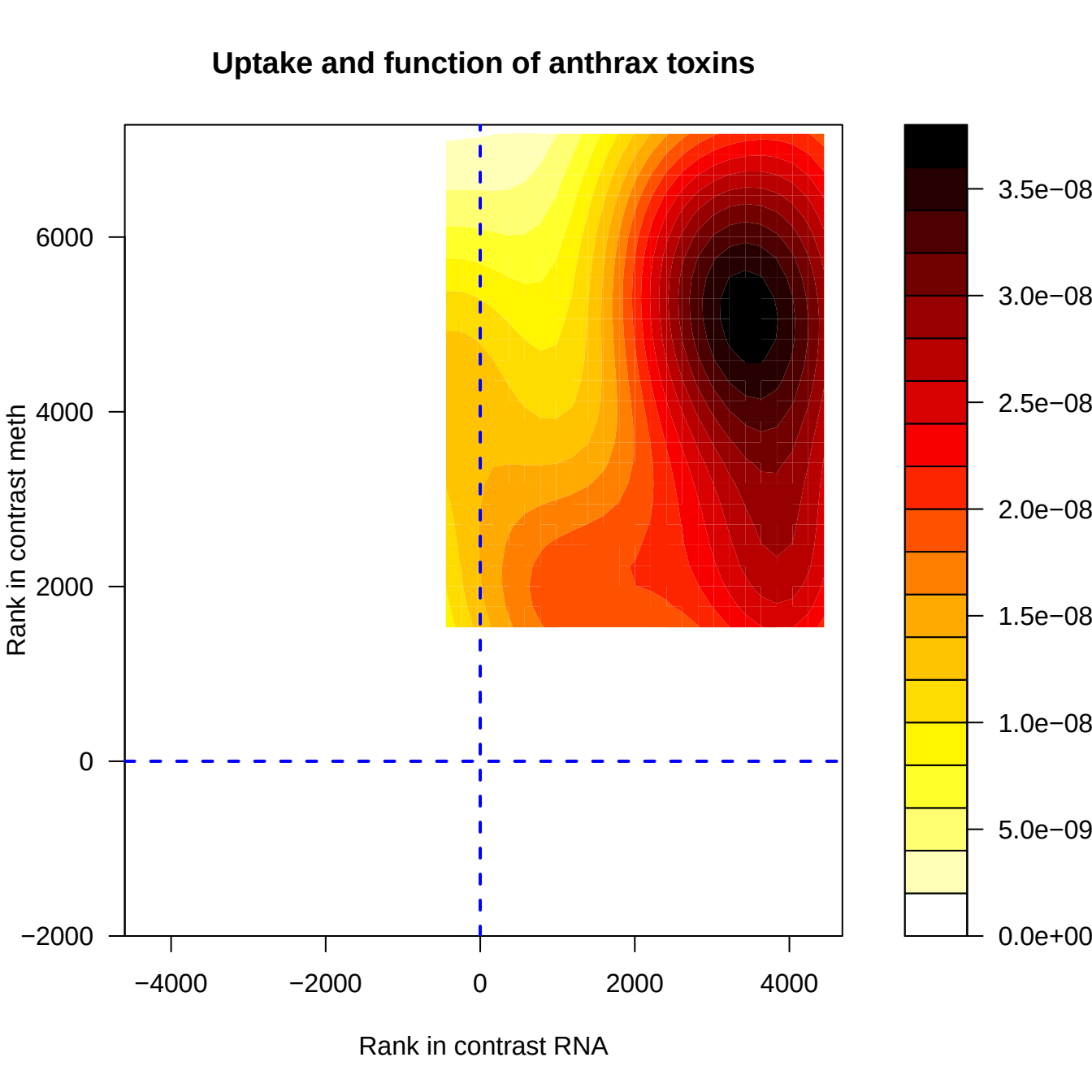

Eukaryotic Translation Termination
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

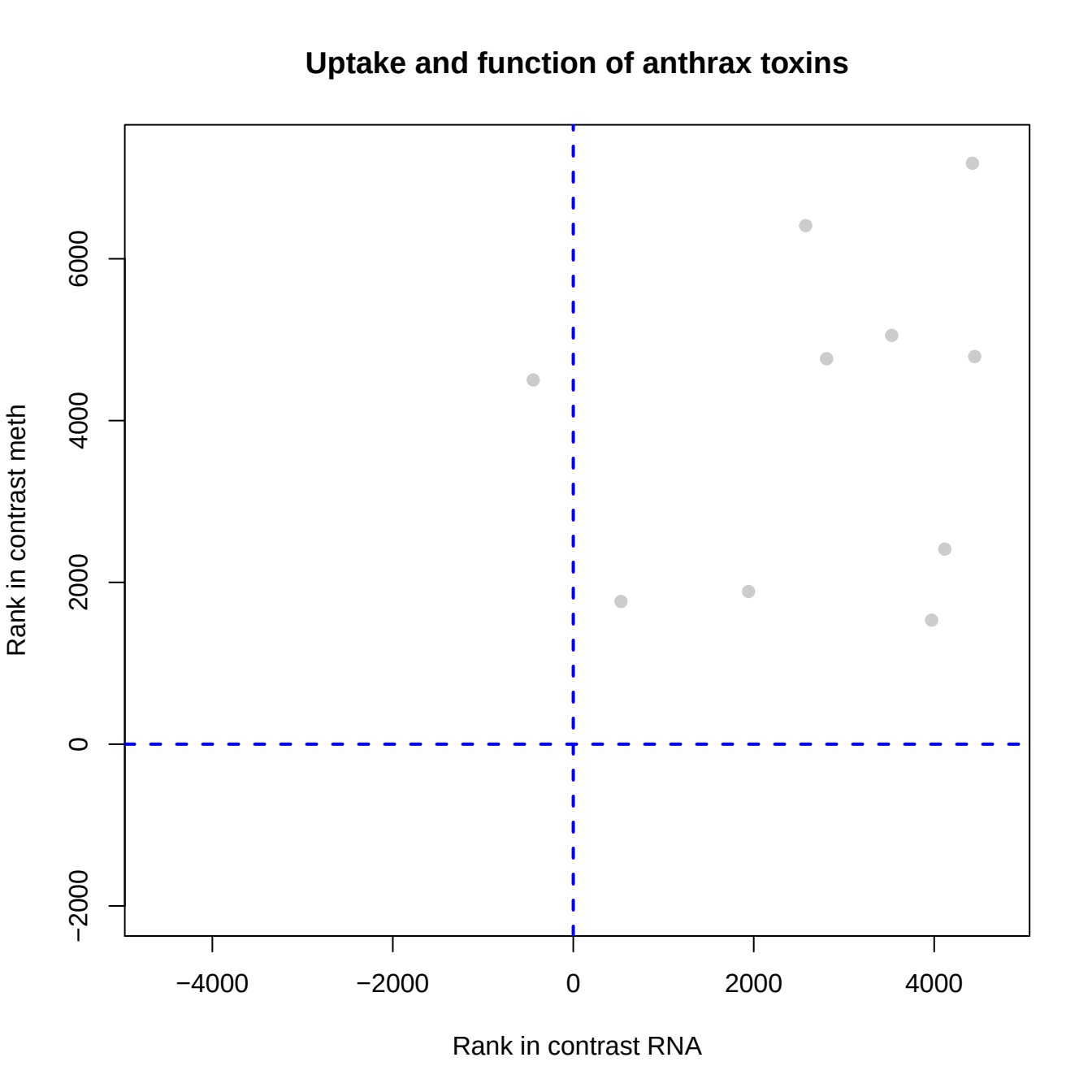

Eukaryotic Translation Termination
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

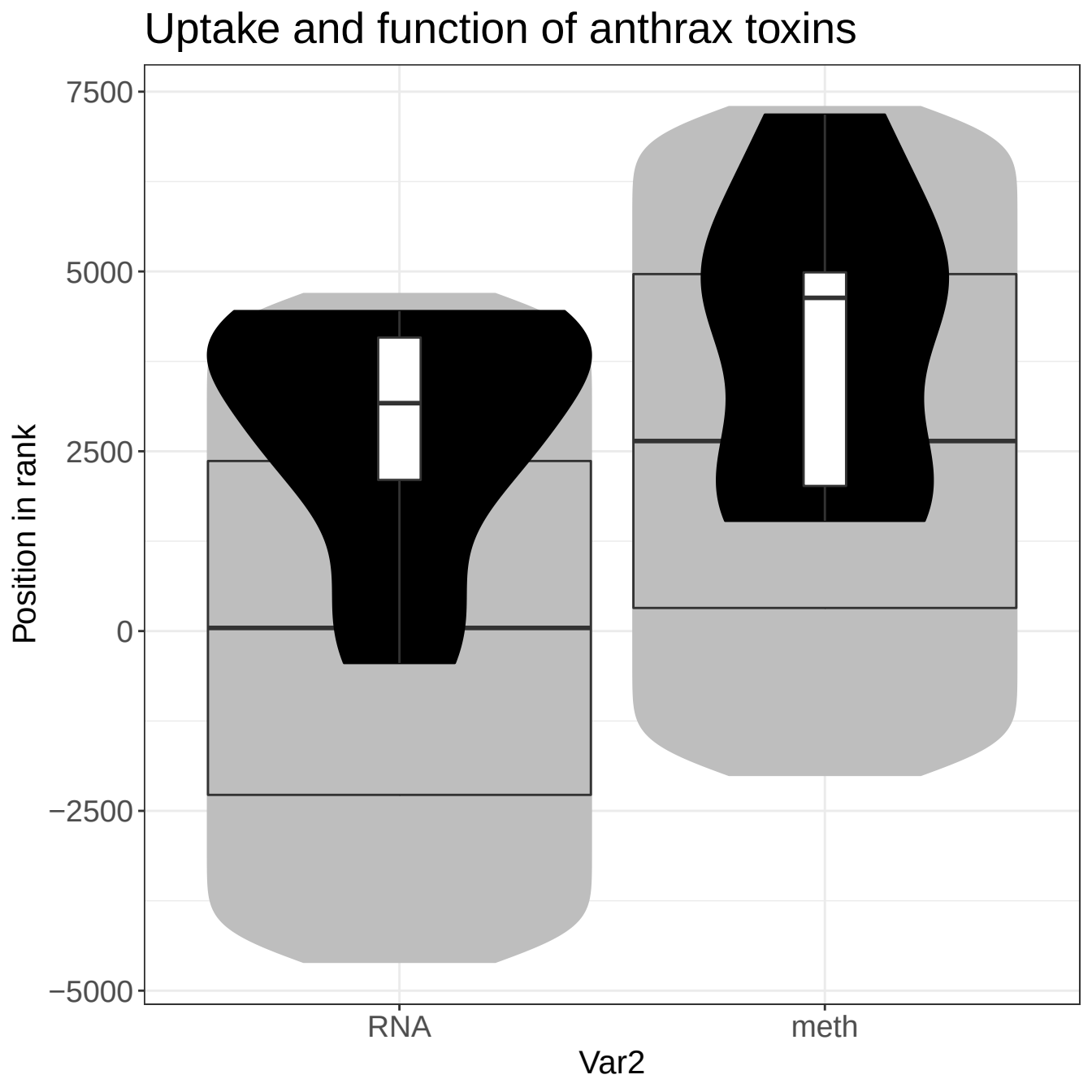

se Mediated Decay (NMD) independent of the Exon Junction (
6000
4000
2000
0
−2000
Rank in contrast meth
−4000
−2000
0
2000
4000
Rank in contrast RNA
7e−08
6e−08
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

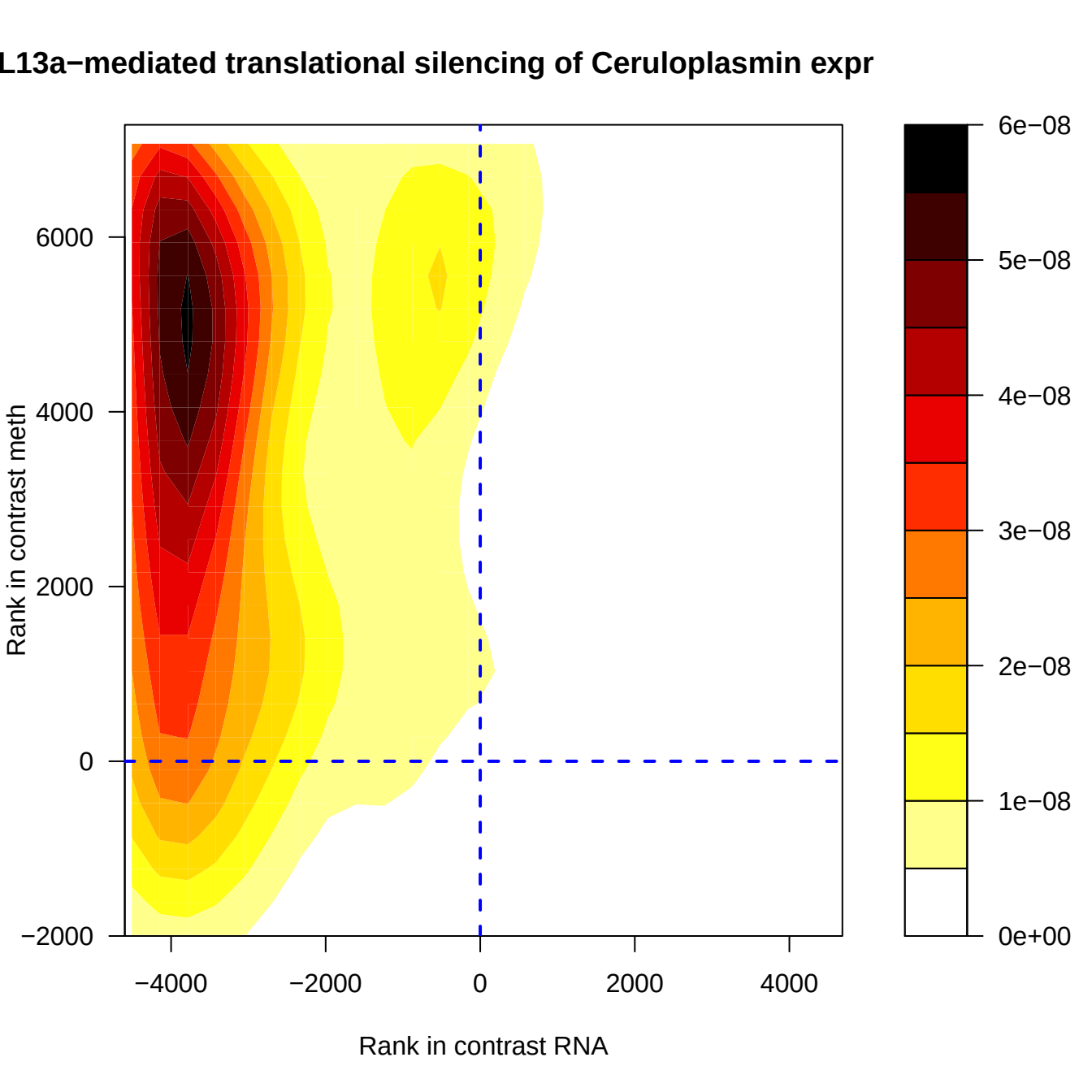

onsense Mediated Decay (NMD) independent of the Exon Junction Complex
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

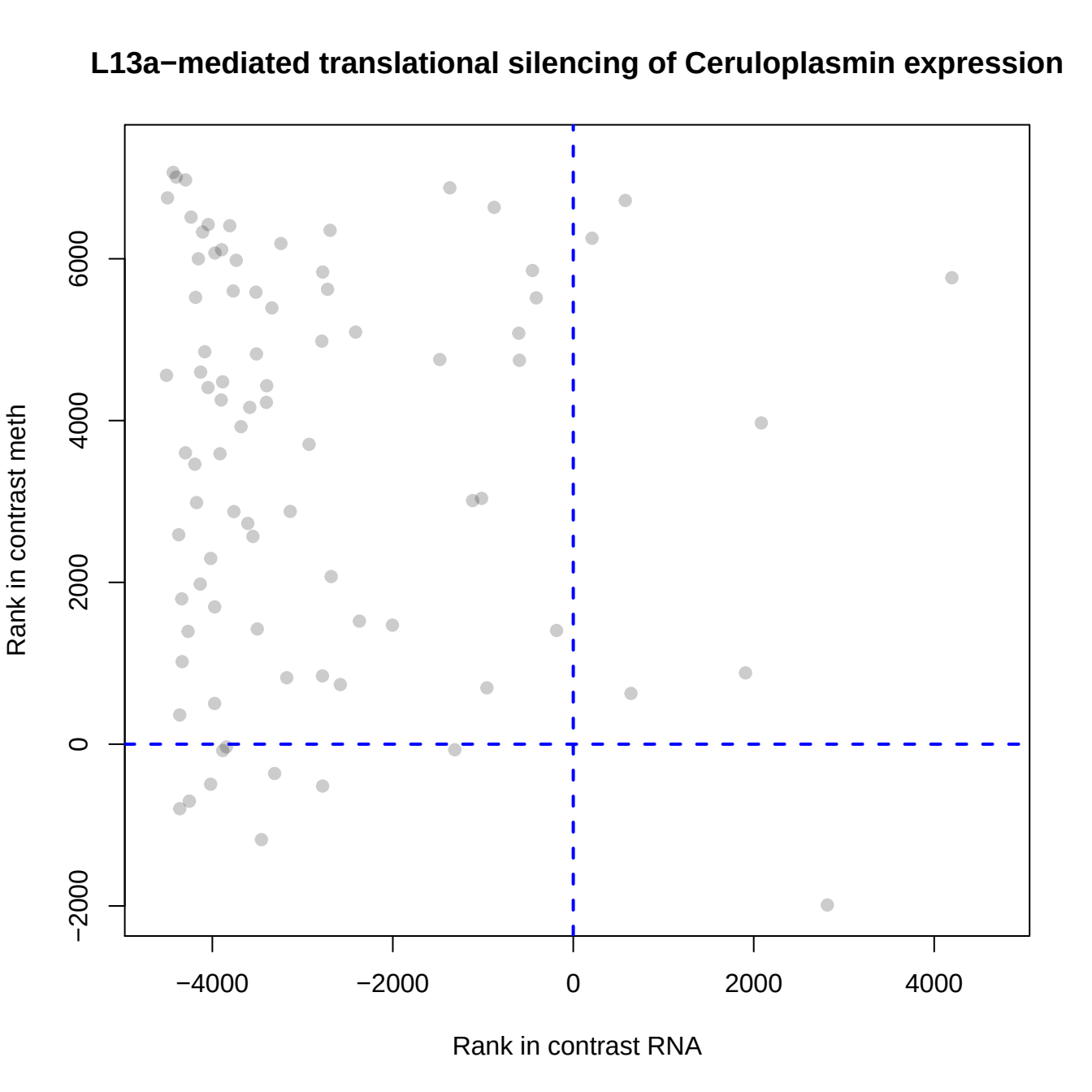

Nonsense Mediated Decay (NMD) independent of
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

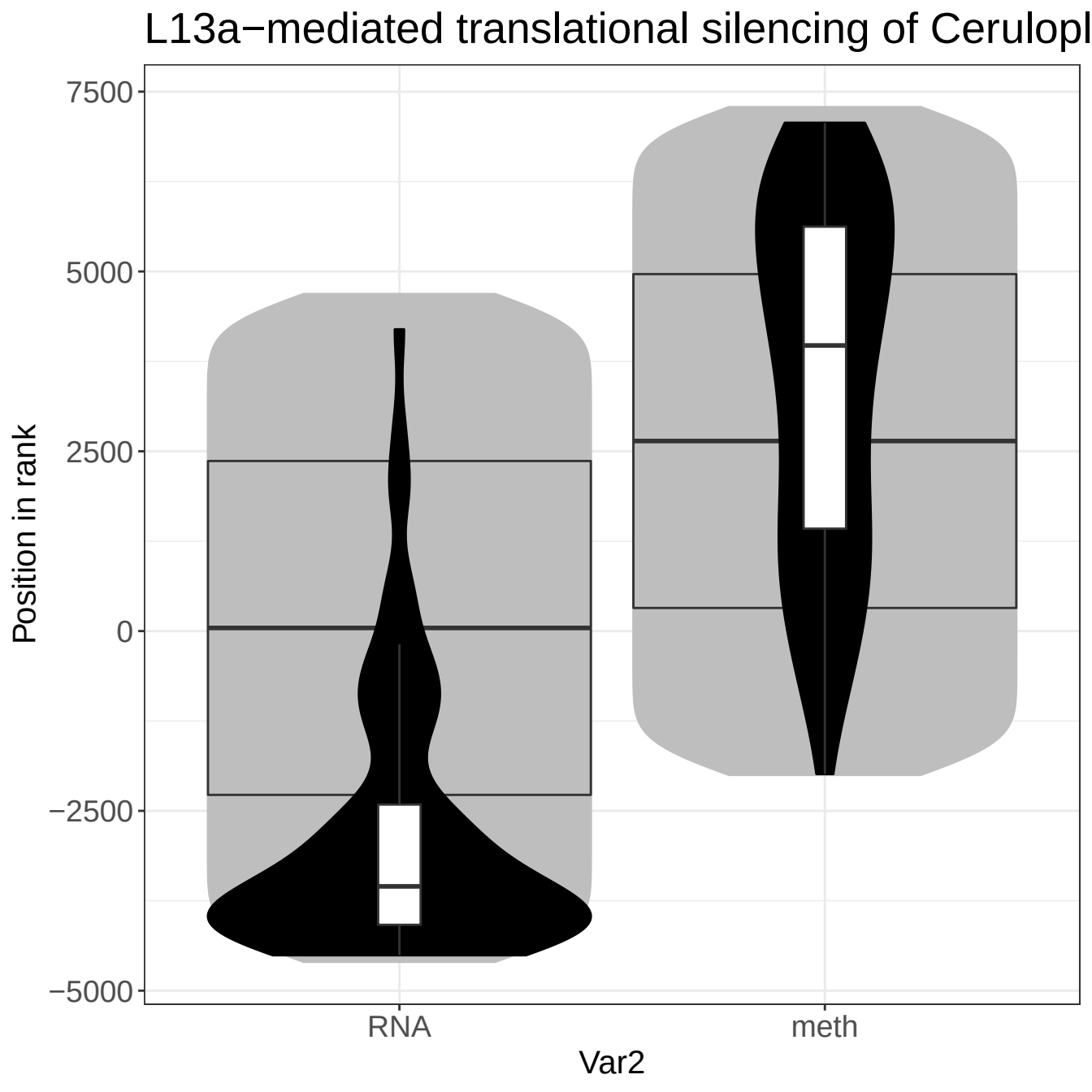

Uptake and function of anthrax toxins
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
3.5e−08
3.0e−08
2.5e−08
2.0e−08
1.5e−08
1.0e−08
5.0e−09
0.0e+00

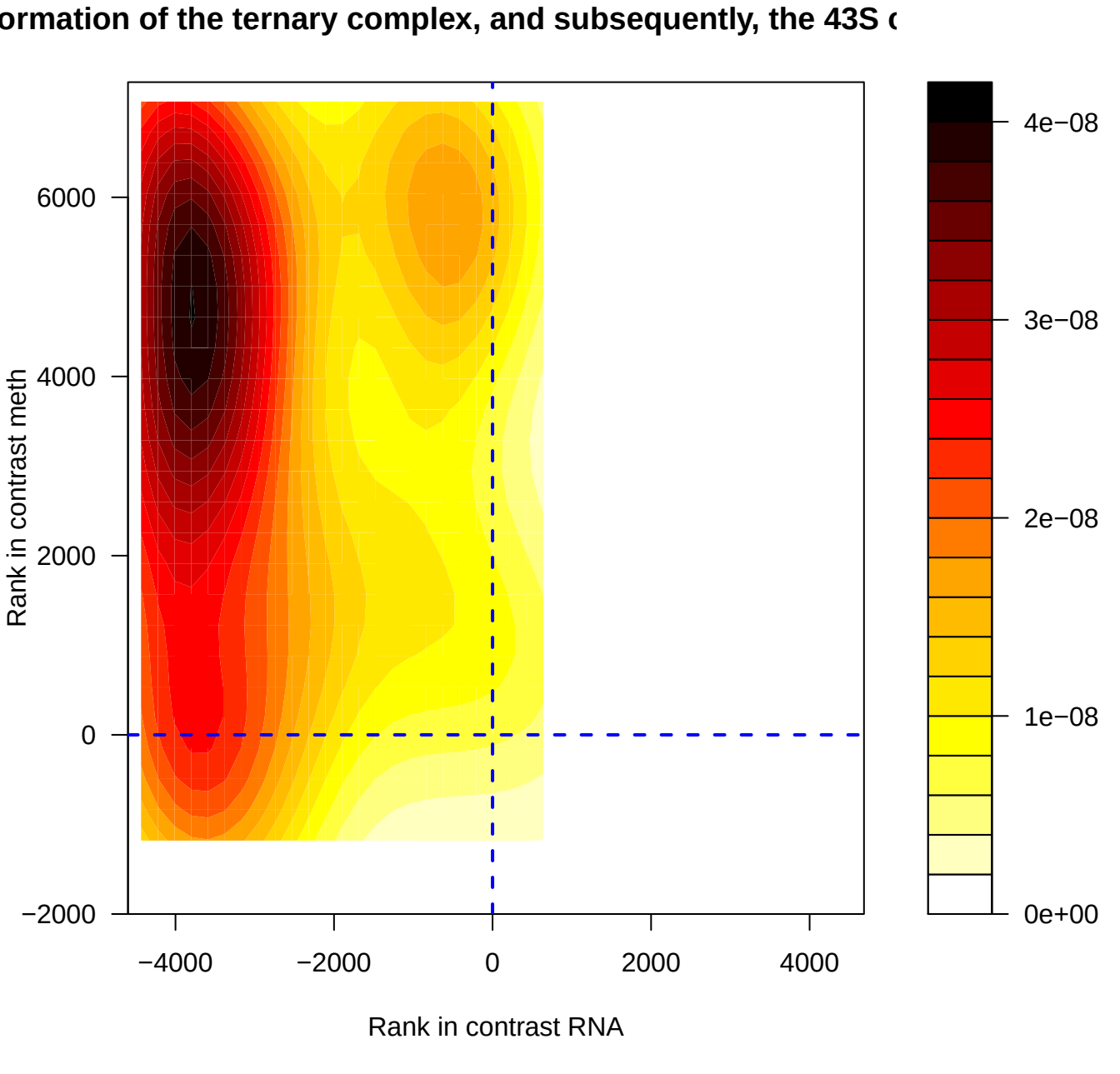

Uptake and function of anthrax toxins
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

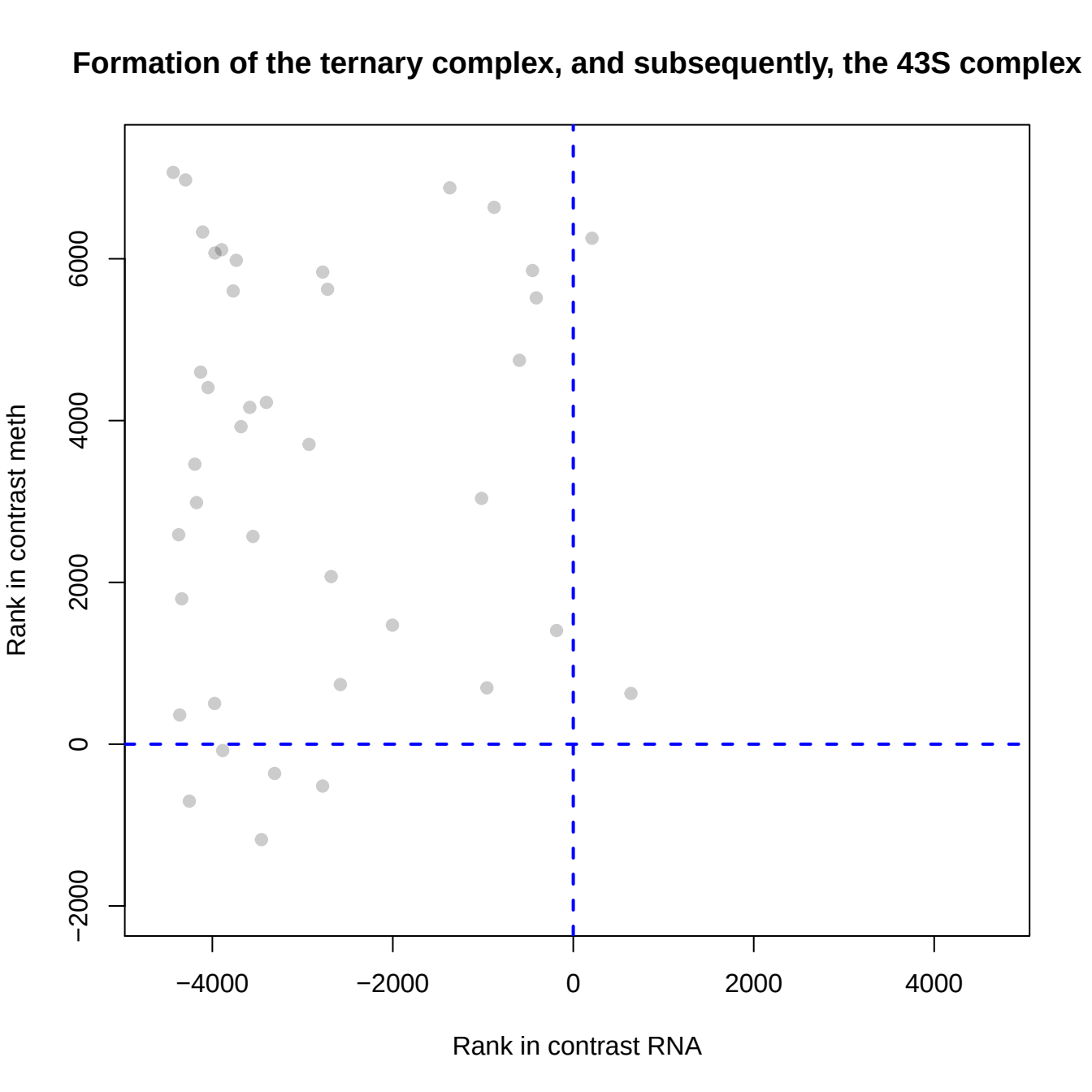

Uptake and function of anthrax toxins
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

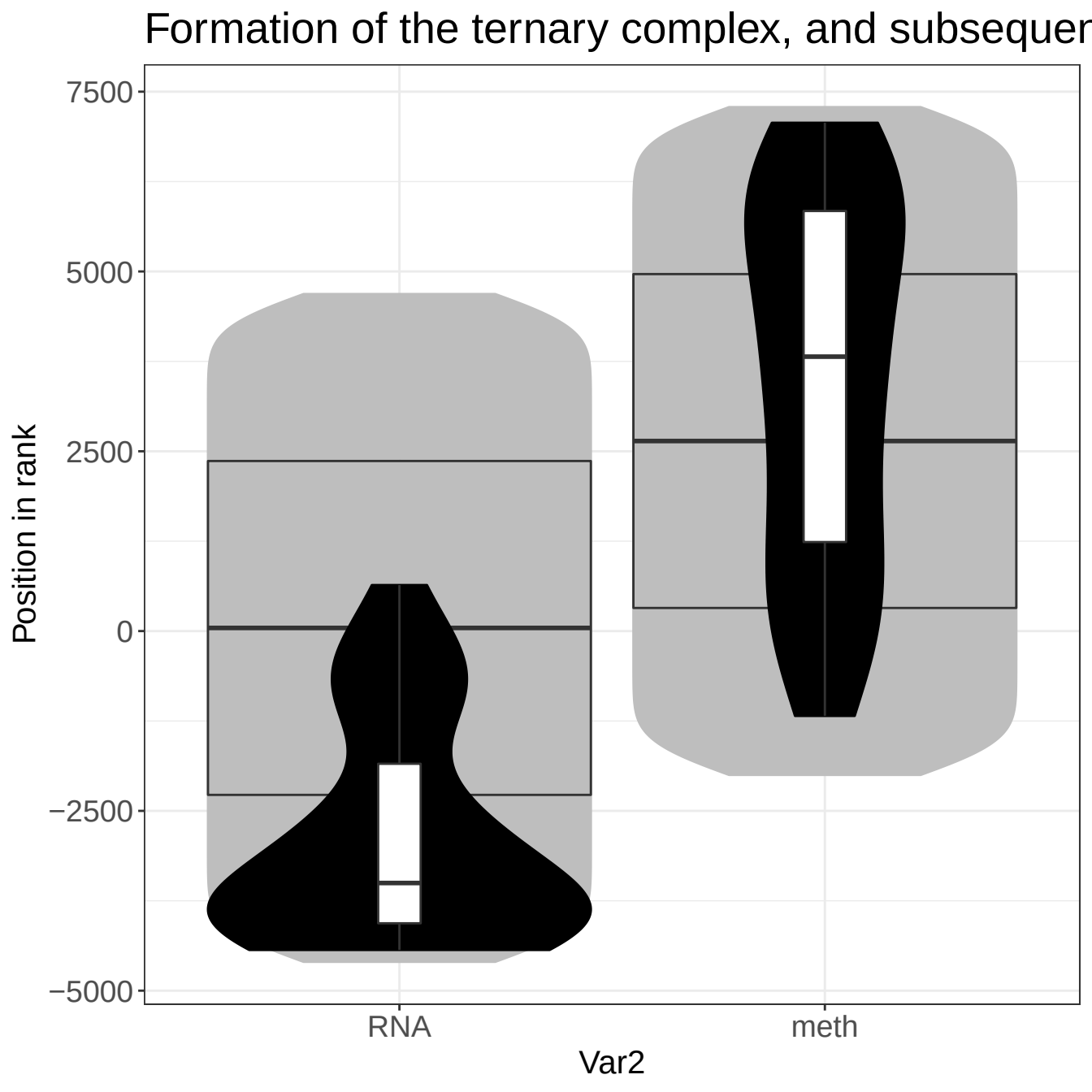

L13a−mediated translational silencing of Ceruloplasmin expr
6000
4000
2000
0
−2000
Rank in contrast meth
−4000
−2000
0
2000
4000
Rank in contrast RNA
6e−08
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

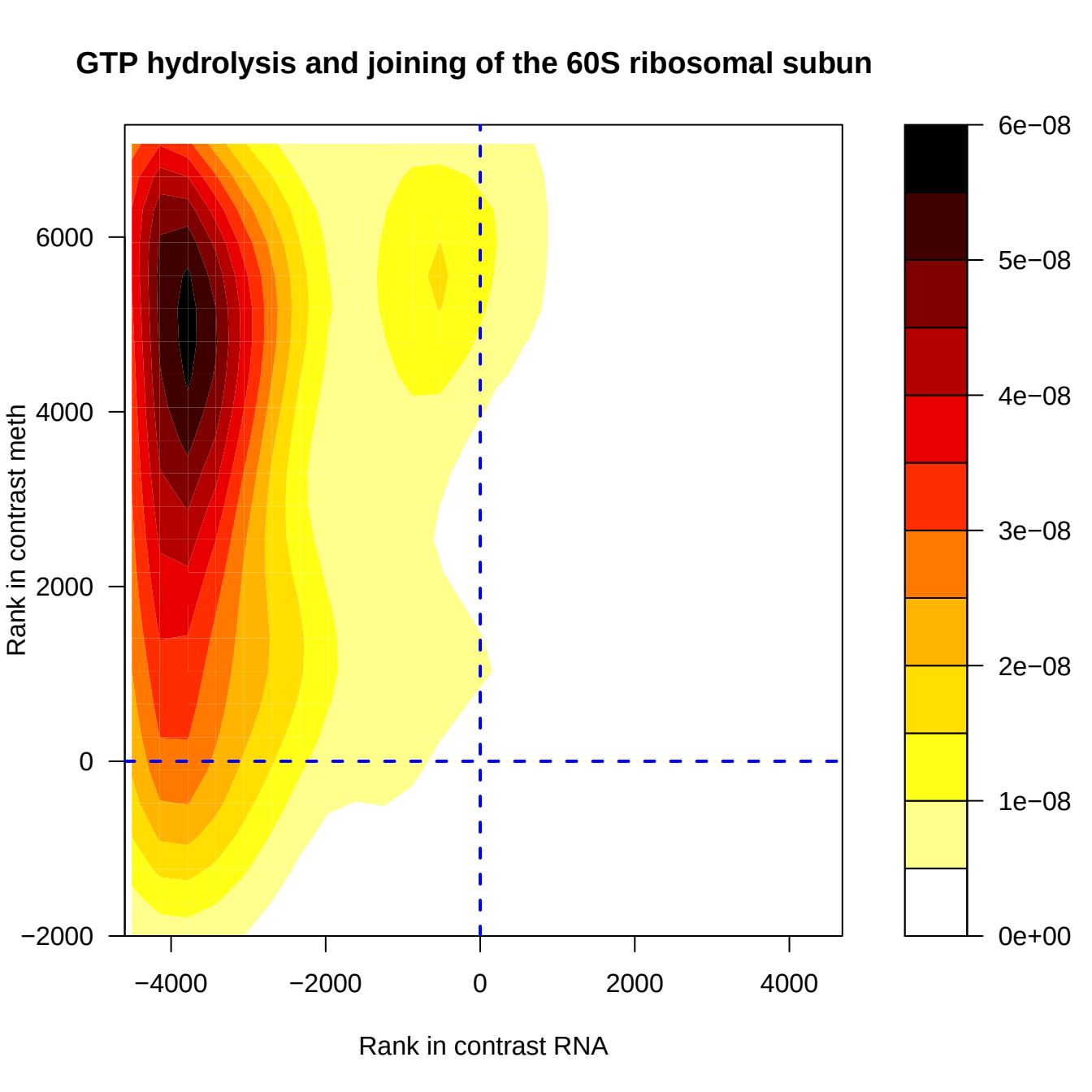

L13a−mediated translational silencing of Ceruloplasmin expression
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

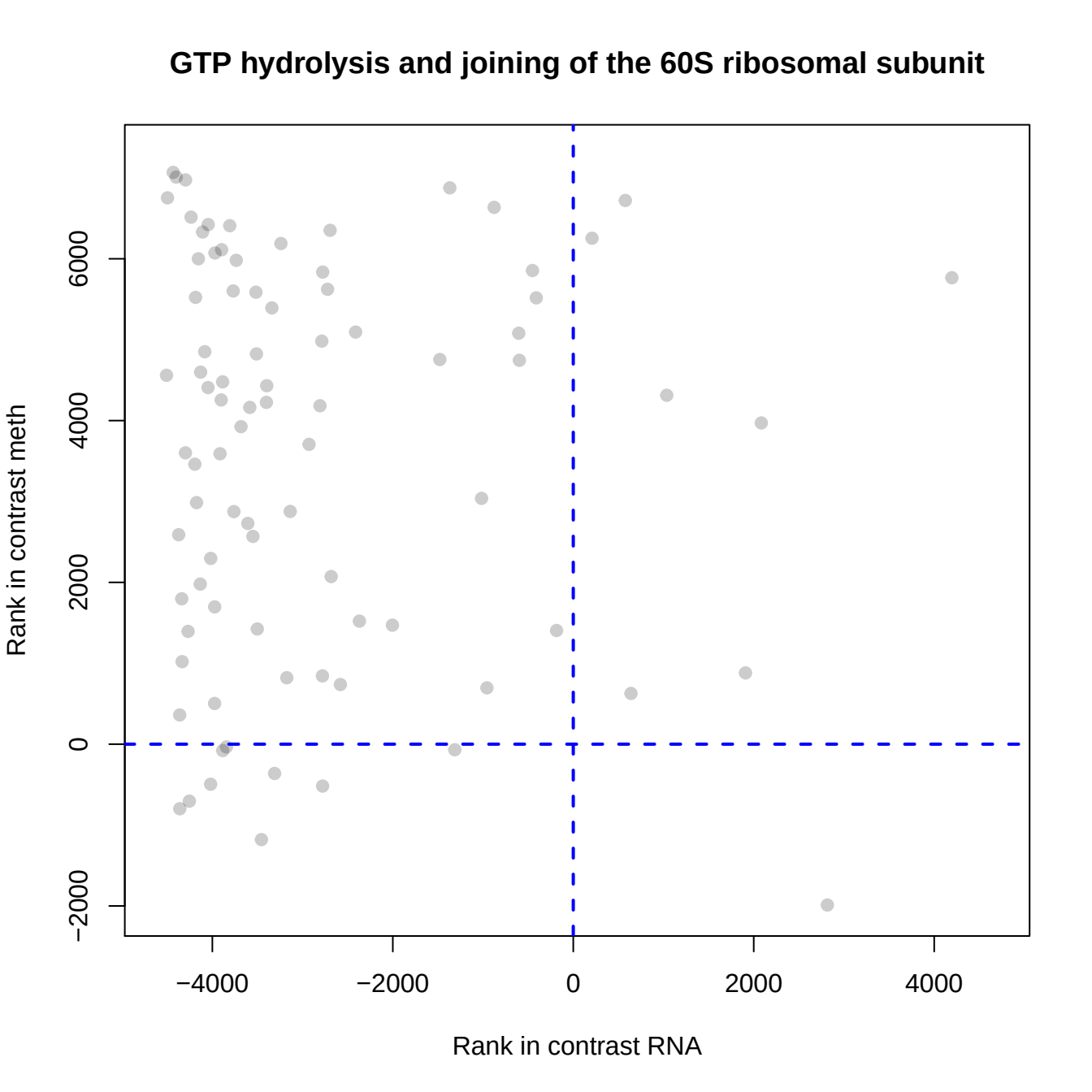

L13a−mediated translational silencing of Cerulopl
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

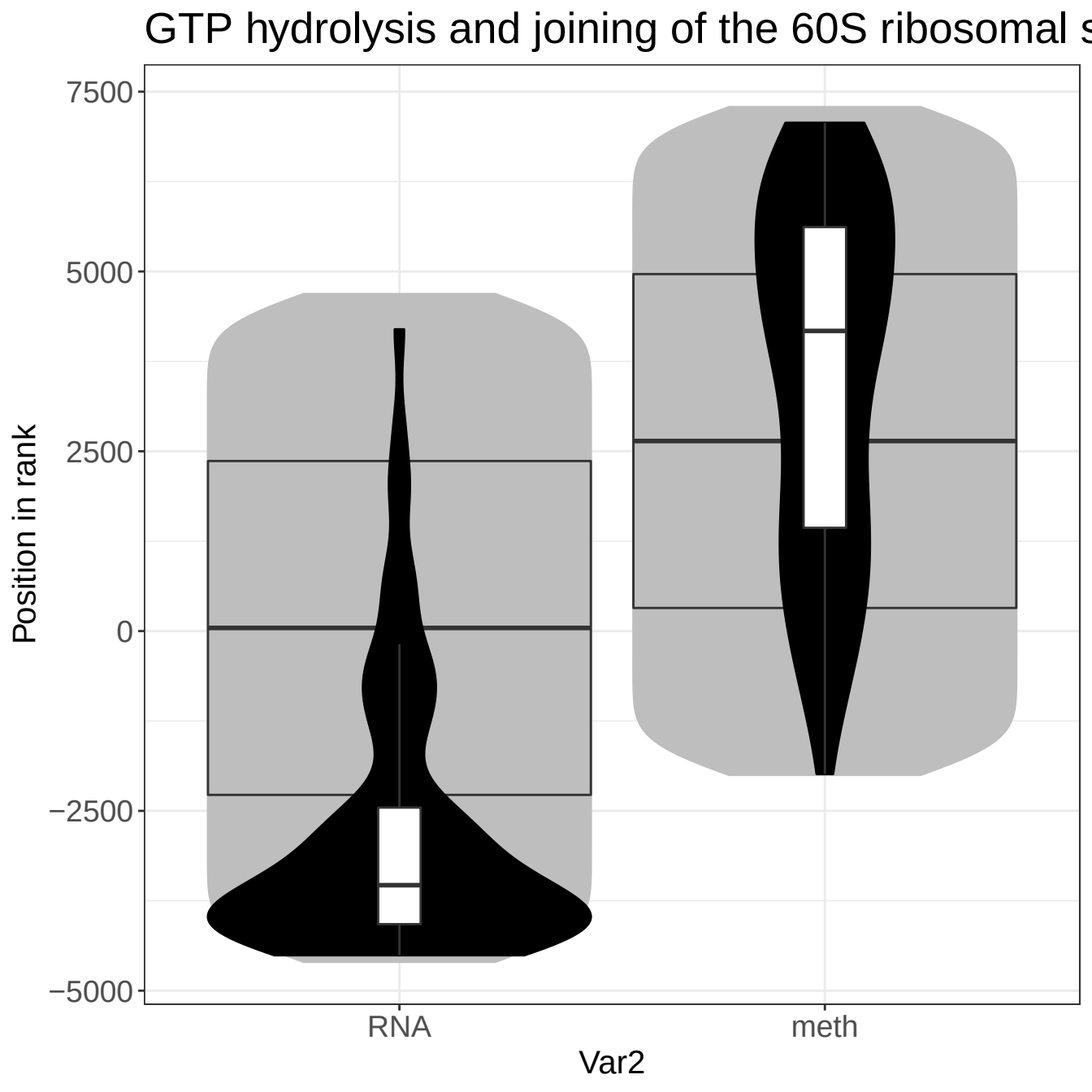

ormation of the ternary complex, and subsequently, the 43S c
6000
4000
2000
0
−2000
Rank in contrast meth
−4000
−2000
0
2000
4000
Rank in contrast RNA
4e−08
3e−08
2e−08
1e−08
0e+00

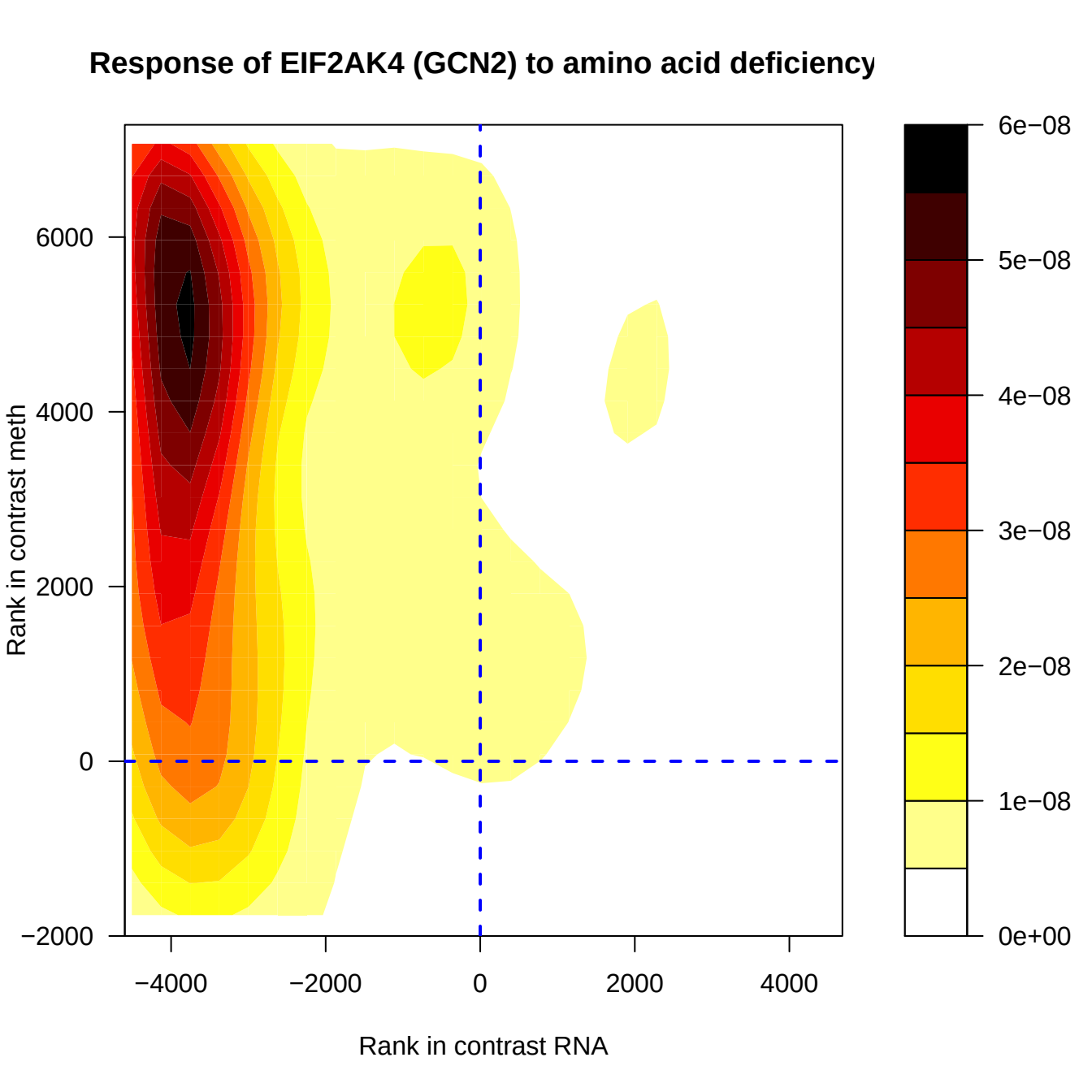

Formation of the ternary complex, and subsequently, the 43S complex
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

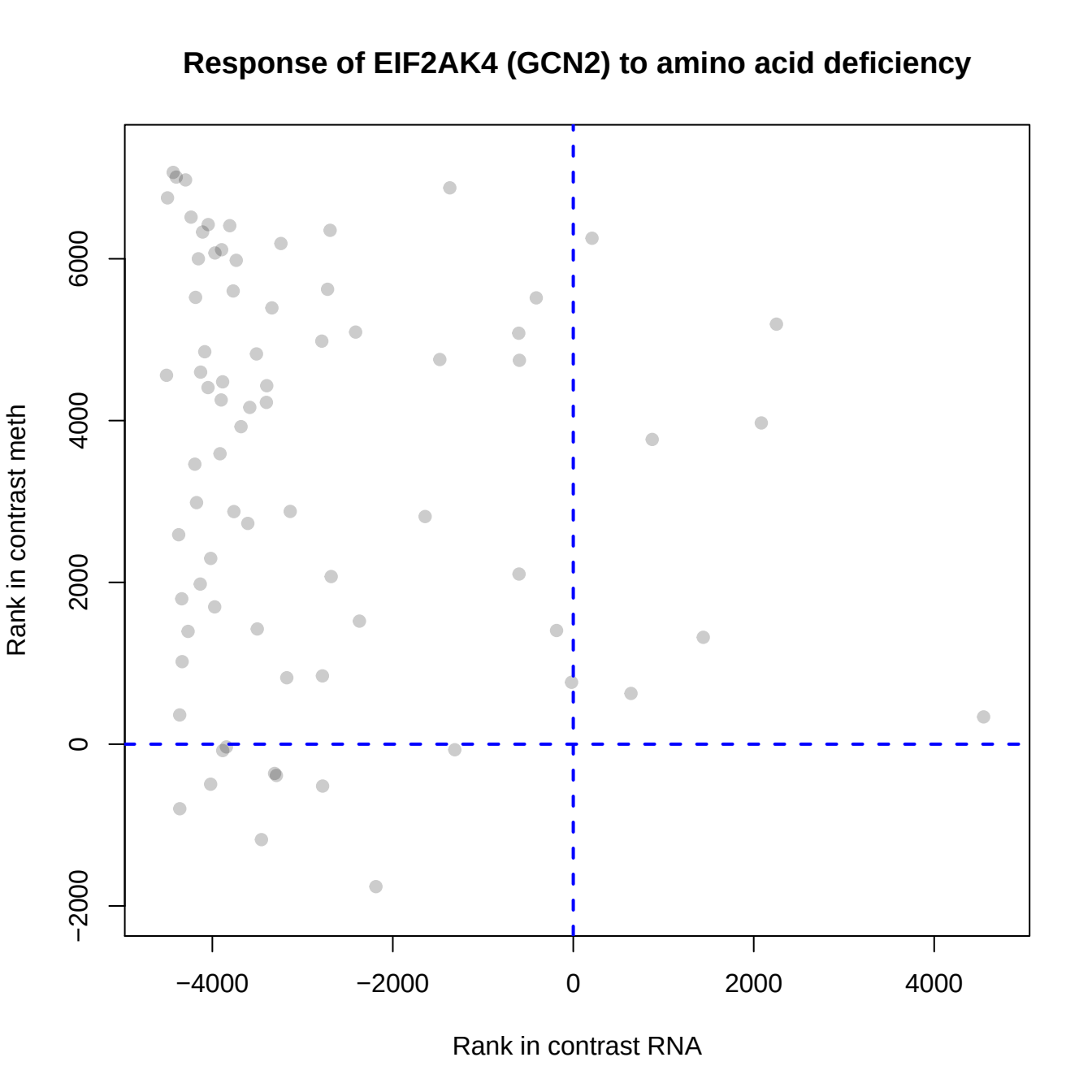

Formation of the ternary complex, and subsequen
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

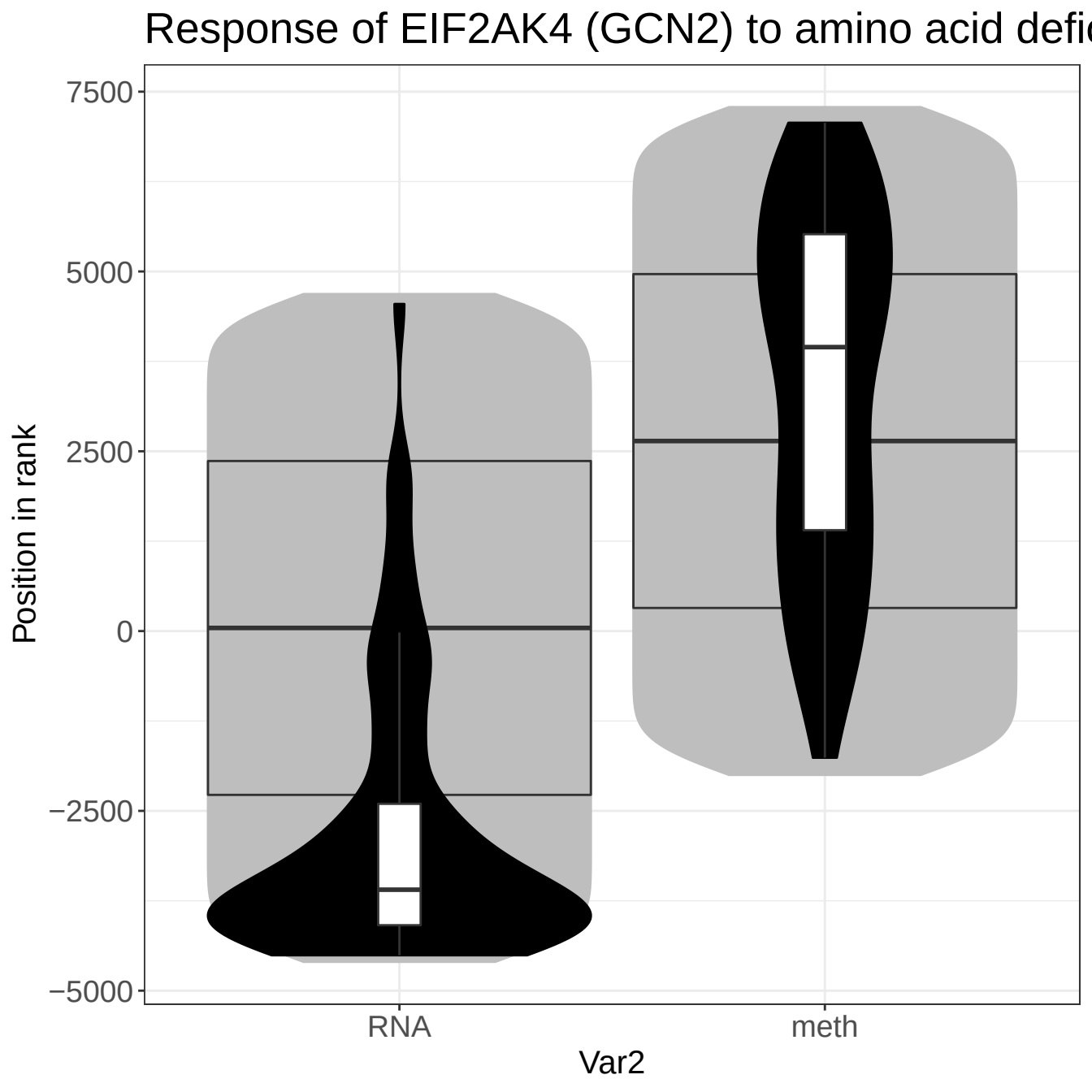

GTP hydrolysis and joining of the 60S ribosomal subun
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
6e−08
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

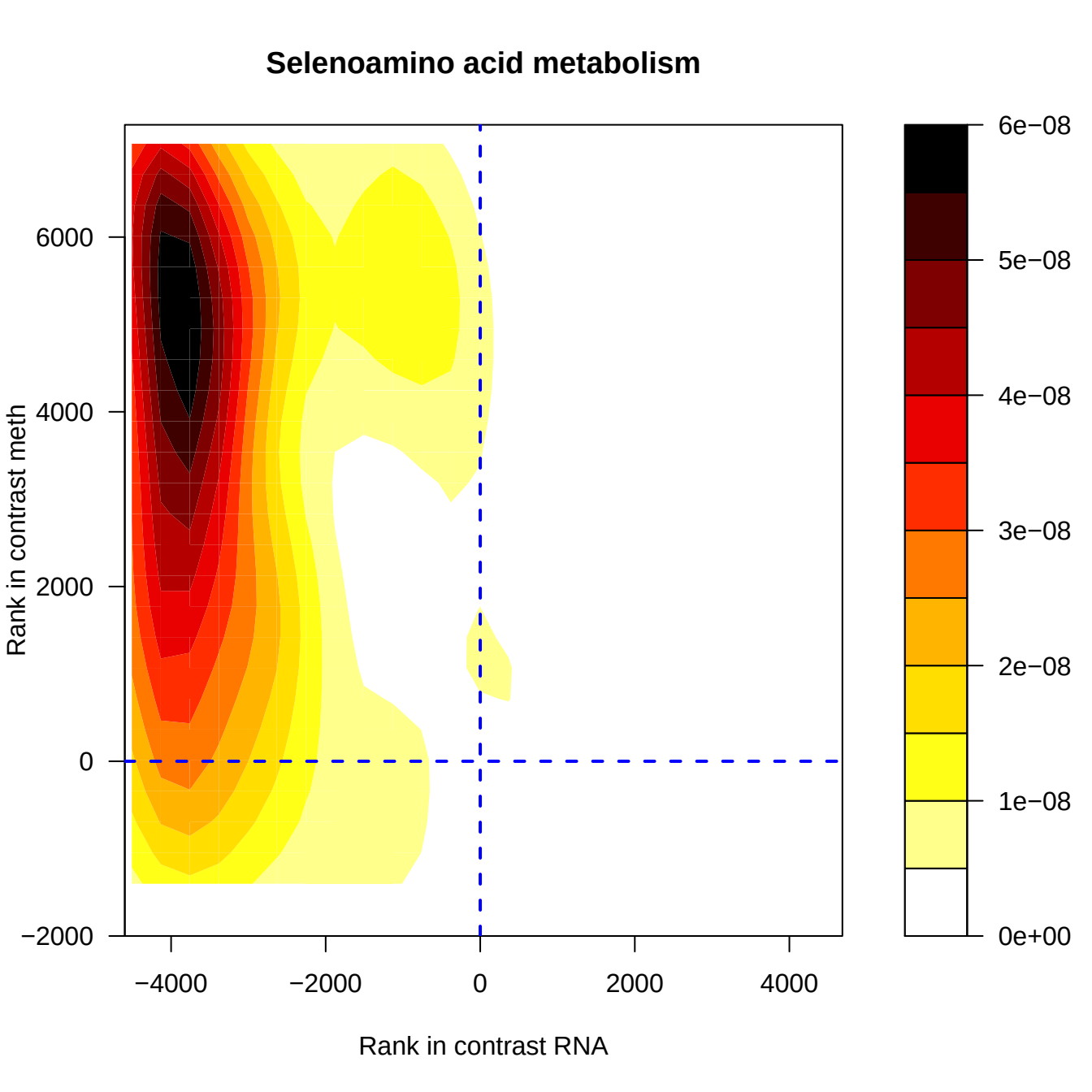

GTP hydrolysis and joining of the 60S ribosomal subunit
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

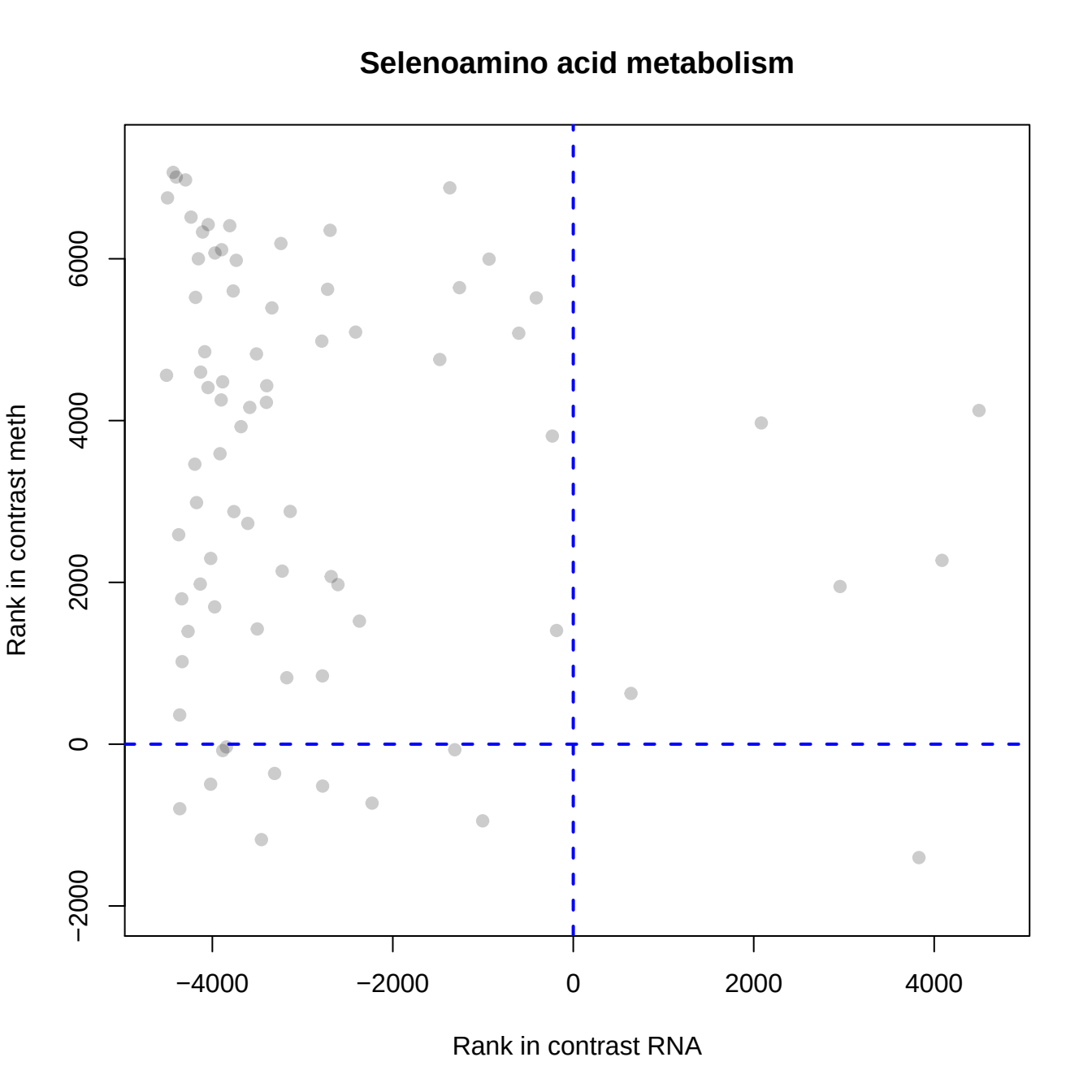

GTP hydrolysis and joining of the 60S ribosomal s
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

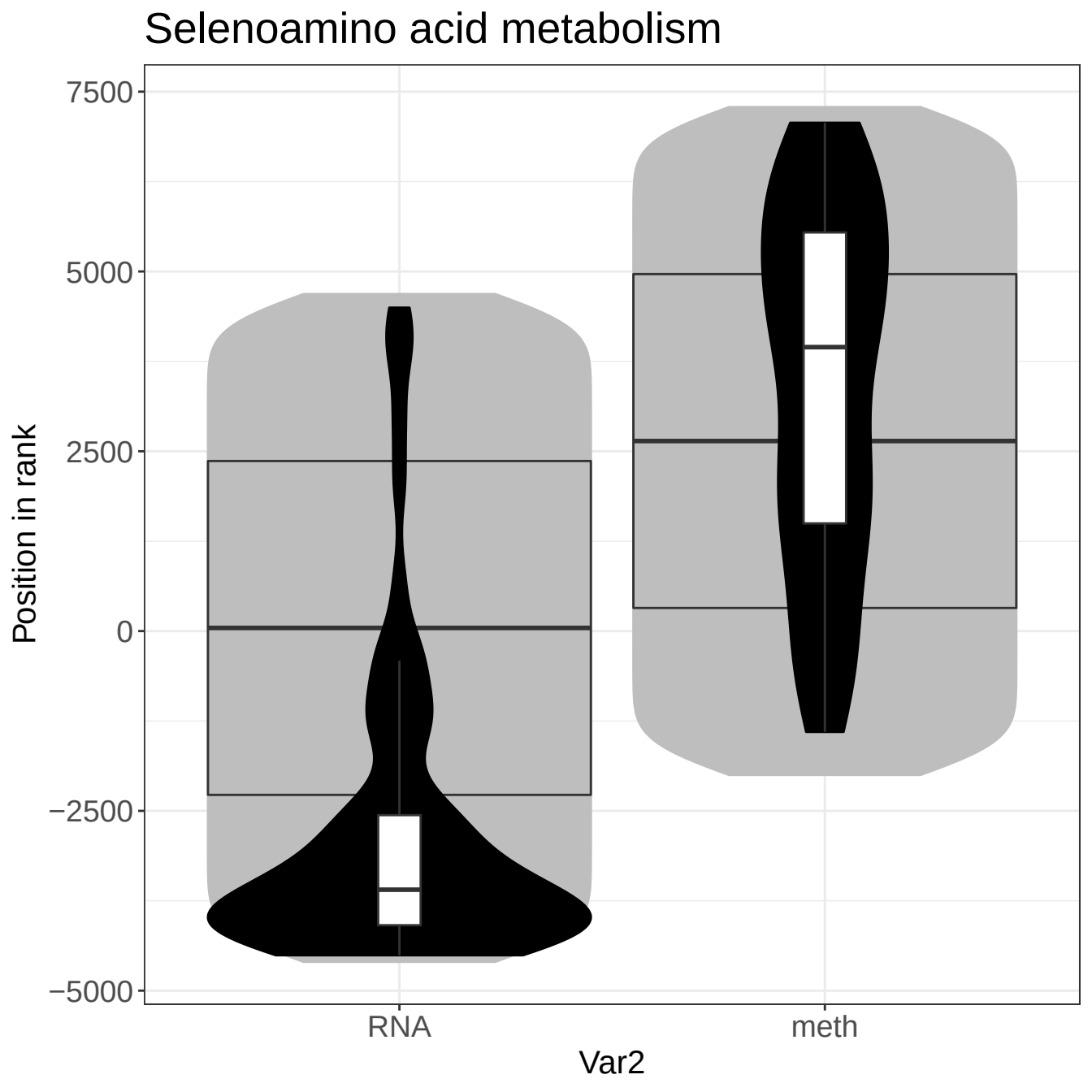

Response of EIF2AK4 (GCN2) to amino acid deficiency
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
6e−08
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

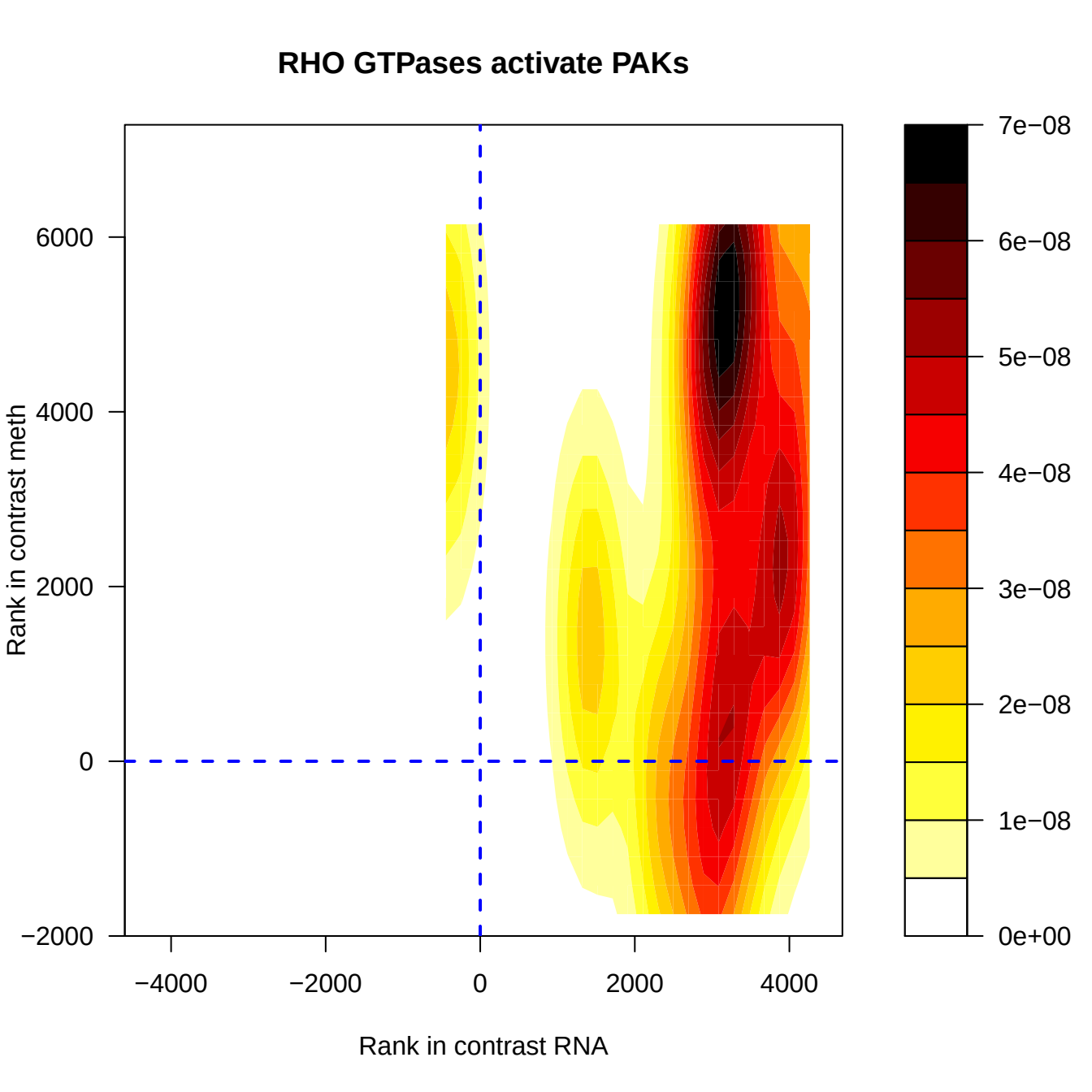

Response of EIF2AK4 (GCN2) to amino acid deficiency
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

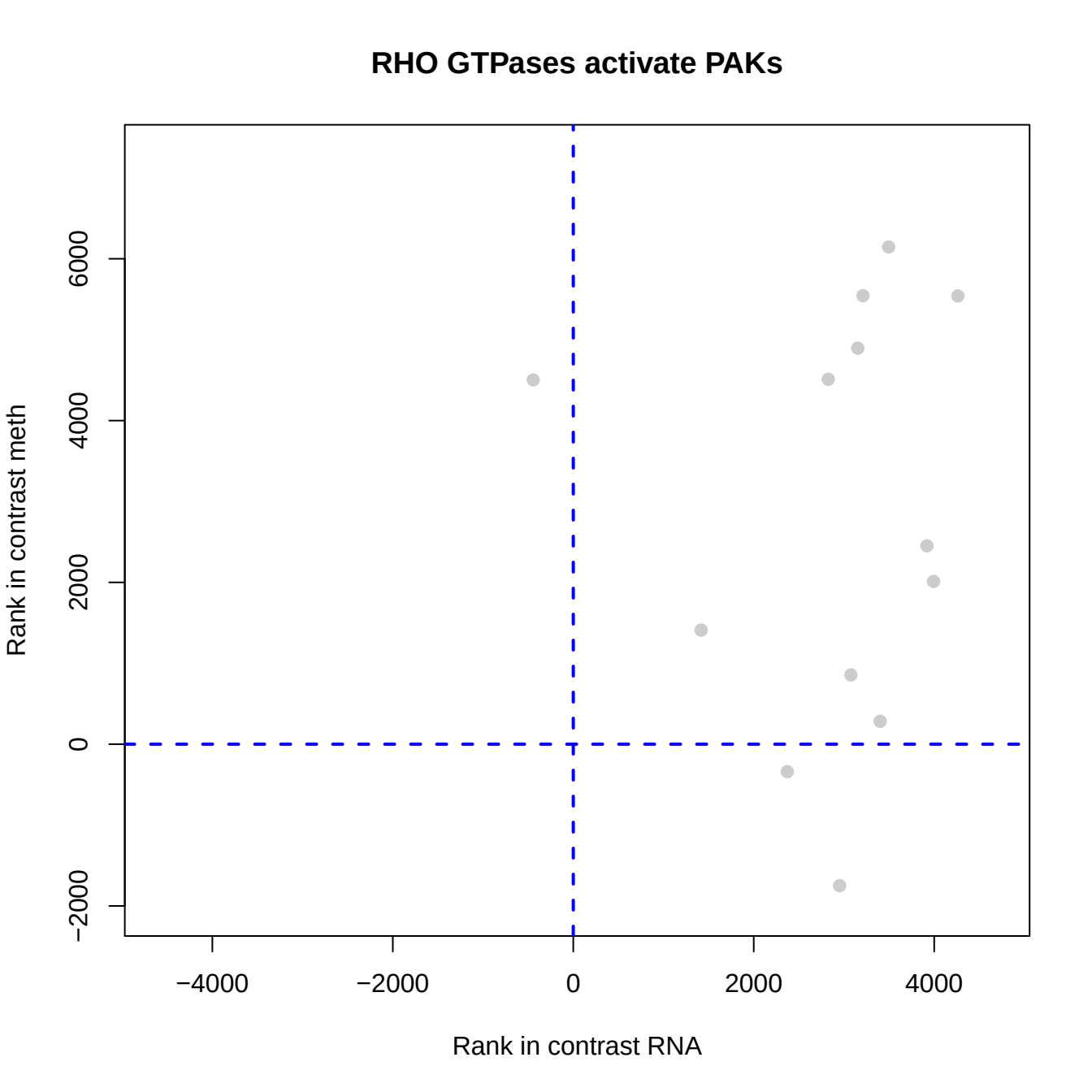

Response of EIF2AK4 (GCN2) to amino acid defi
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

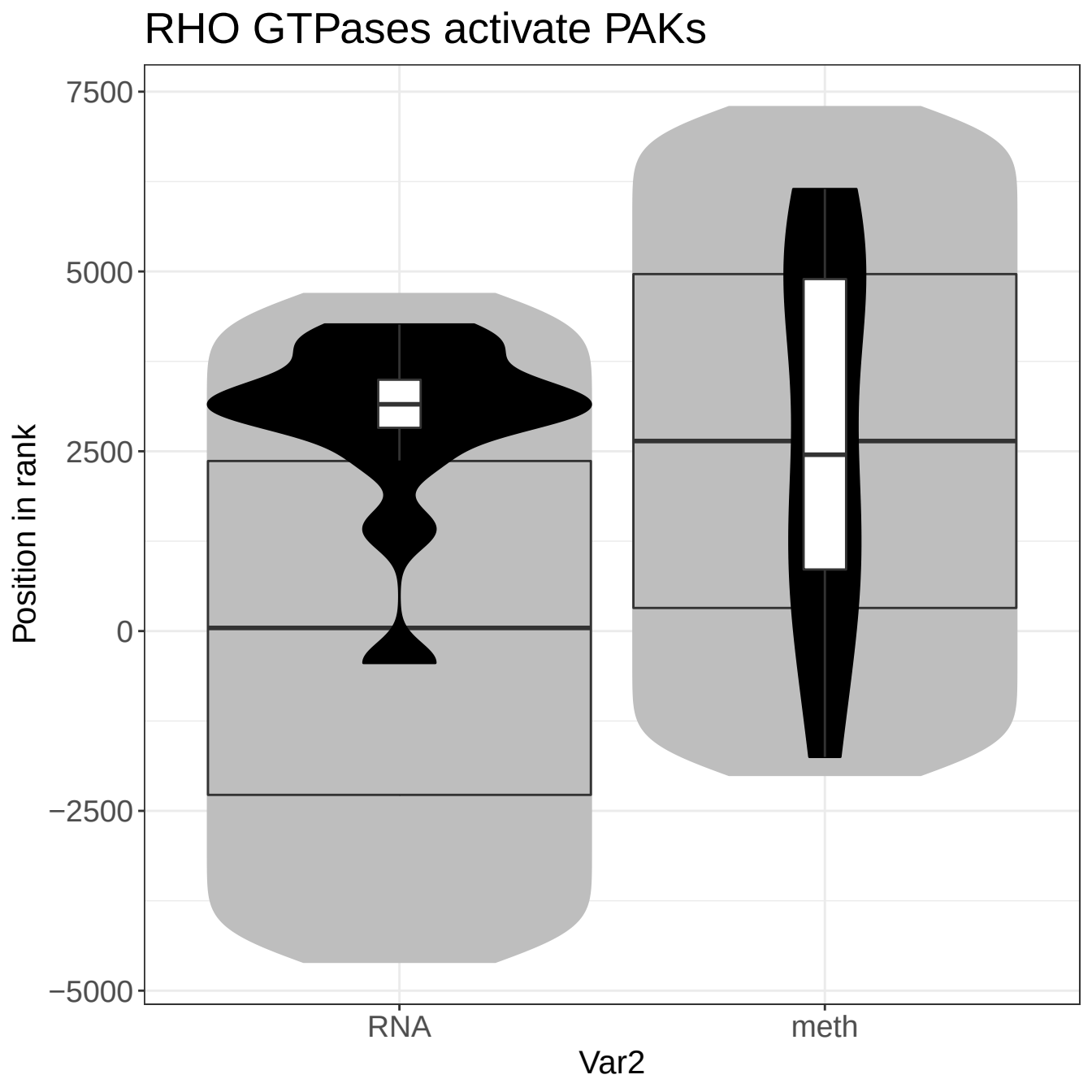

Selenoamino acid metabolism
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
6e−08
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

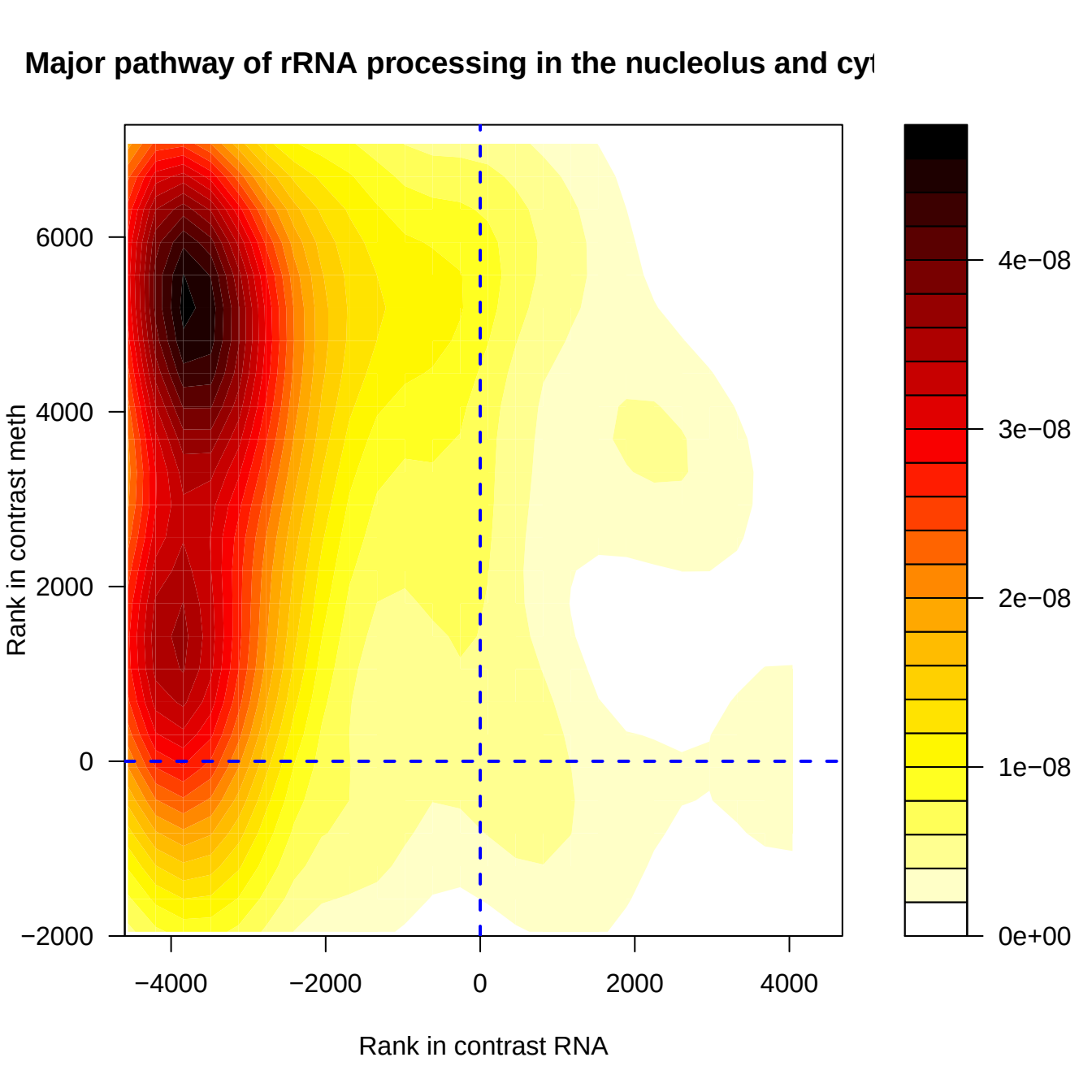

Selenoamino acid metabolism
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

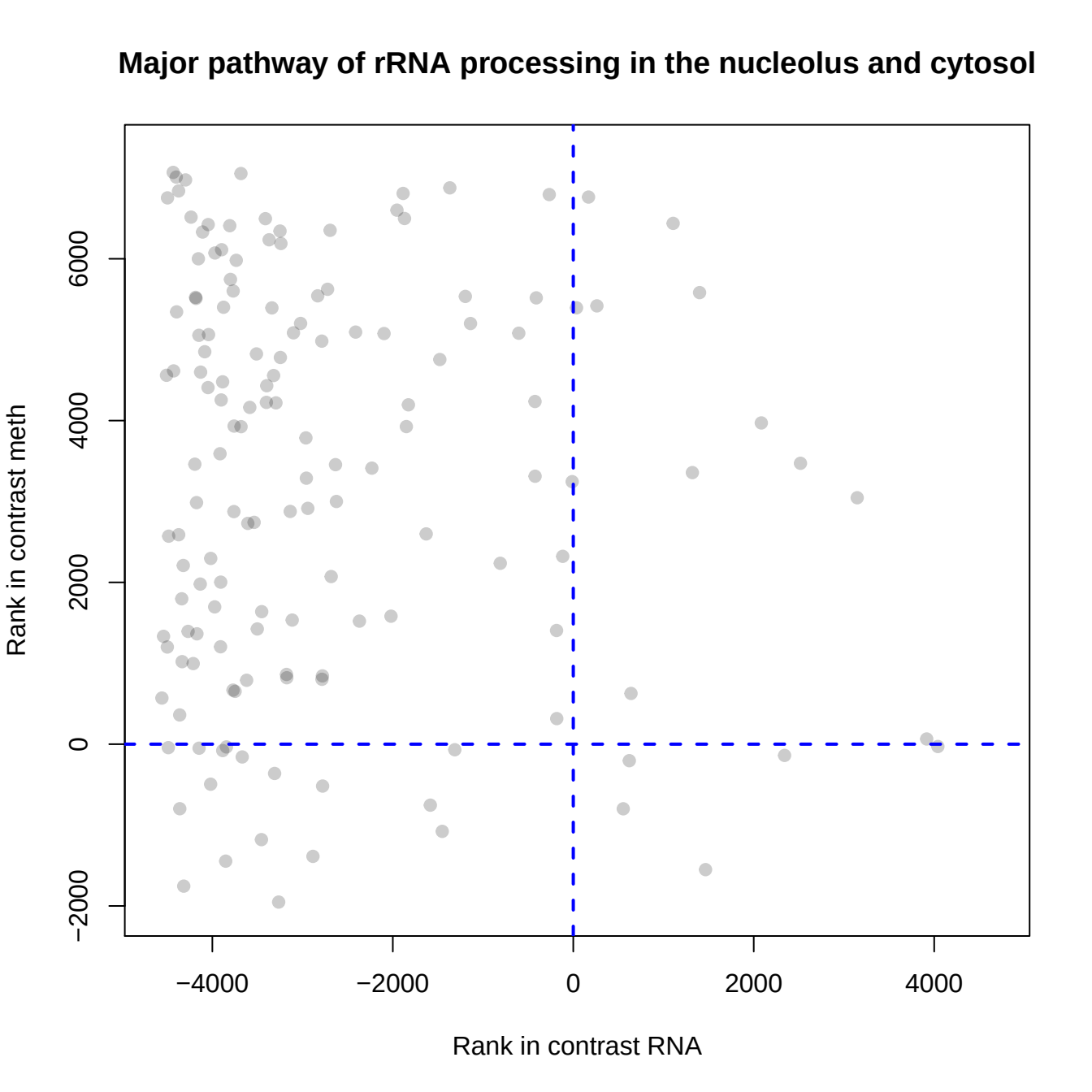

Selenoamino acid metabolism
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

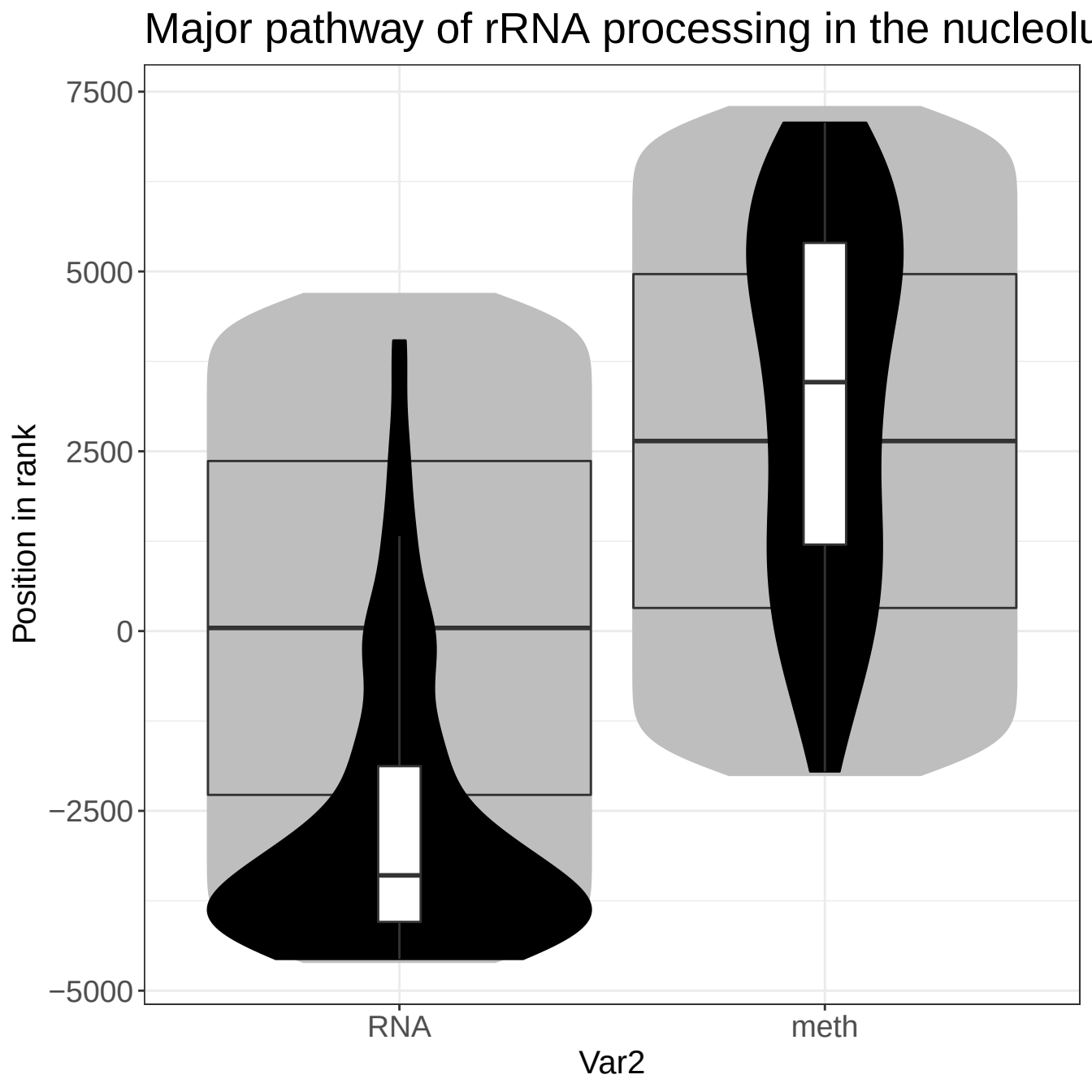

RHO GTPases activate PAKs
6000
4000
2000
0
−2000
Rank in contrast meth
−4000
−2000
0
2000
4000
Rank in contrast RNA
7e−08
6e−08
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

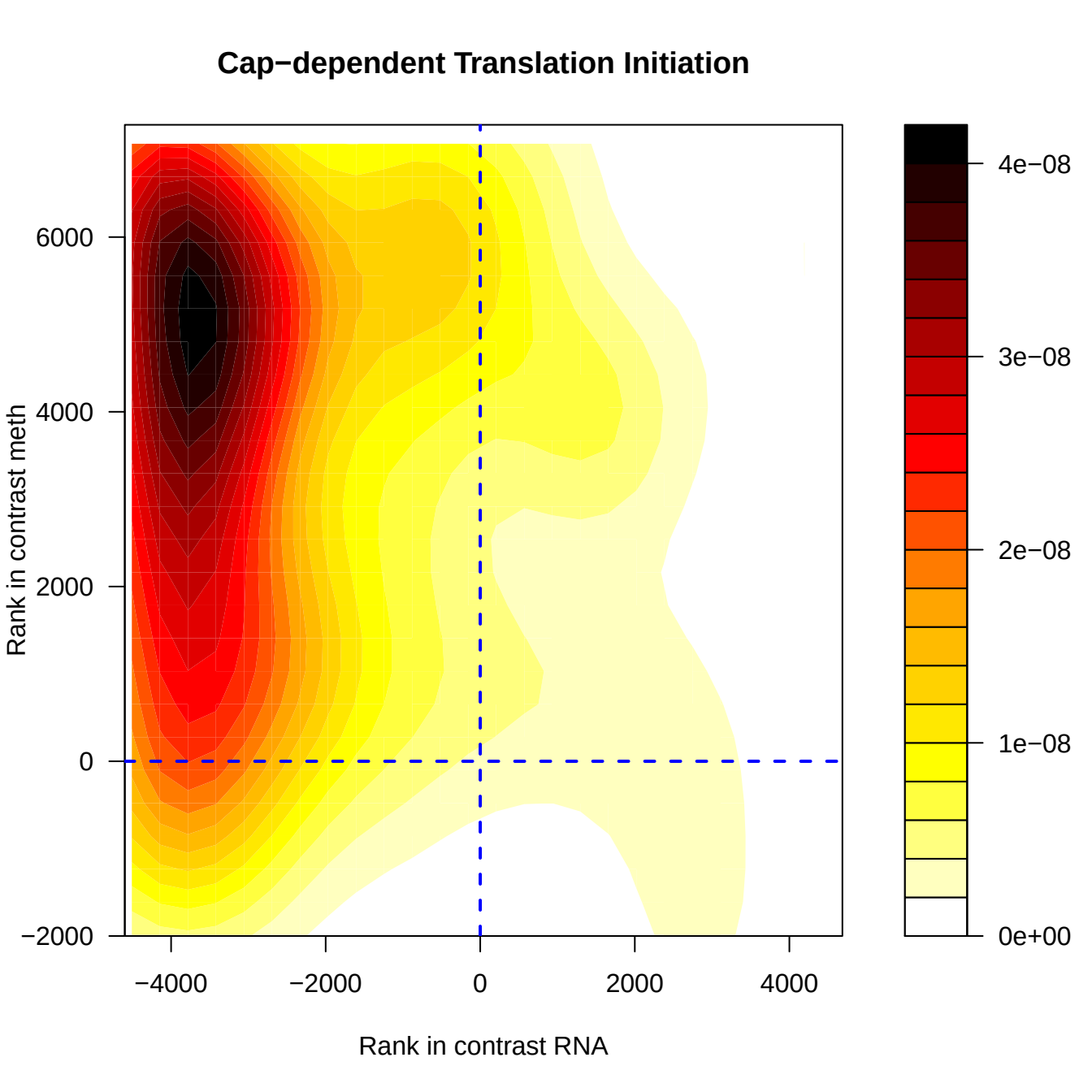

RHO GTPases activate PAKs
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

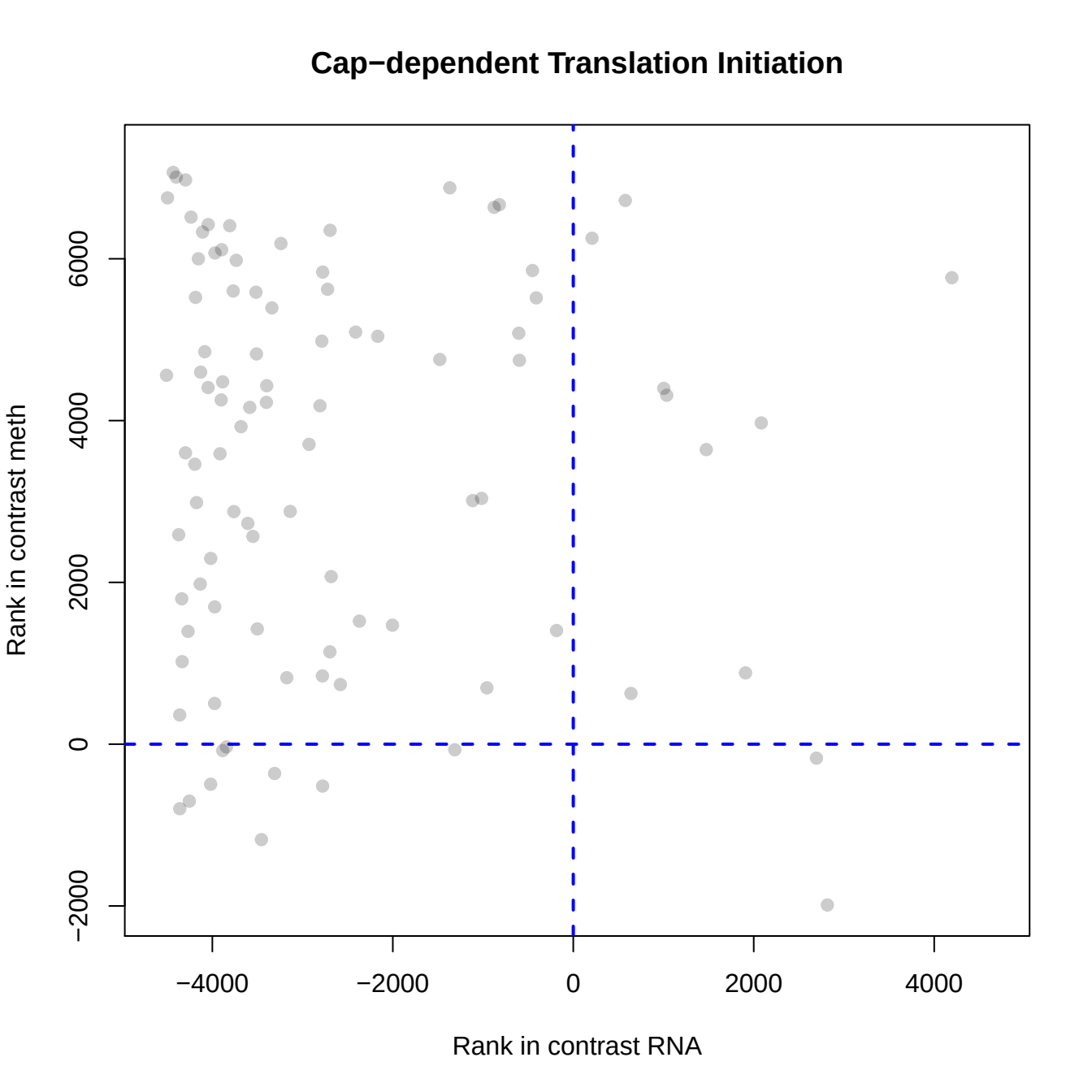

RHO GTPases activate PAKs
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

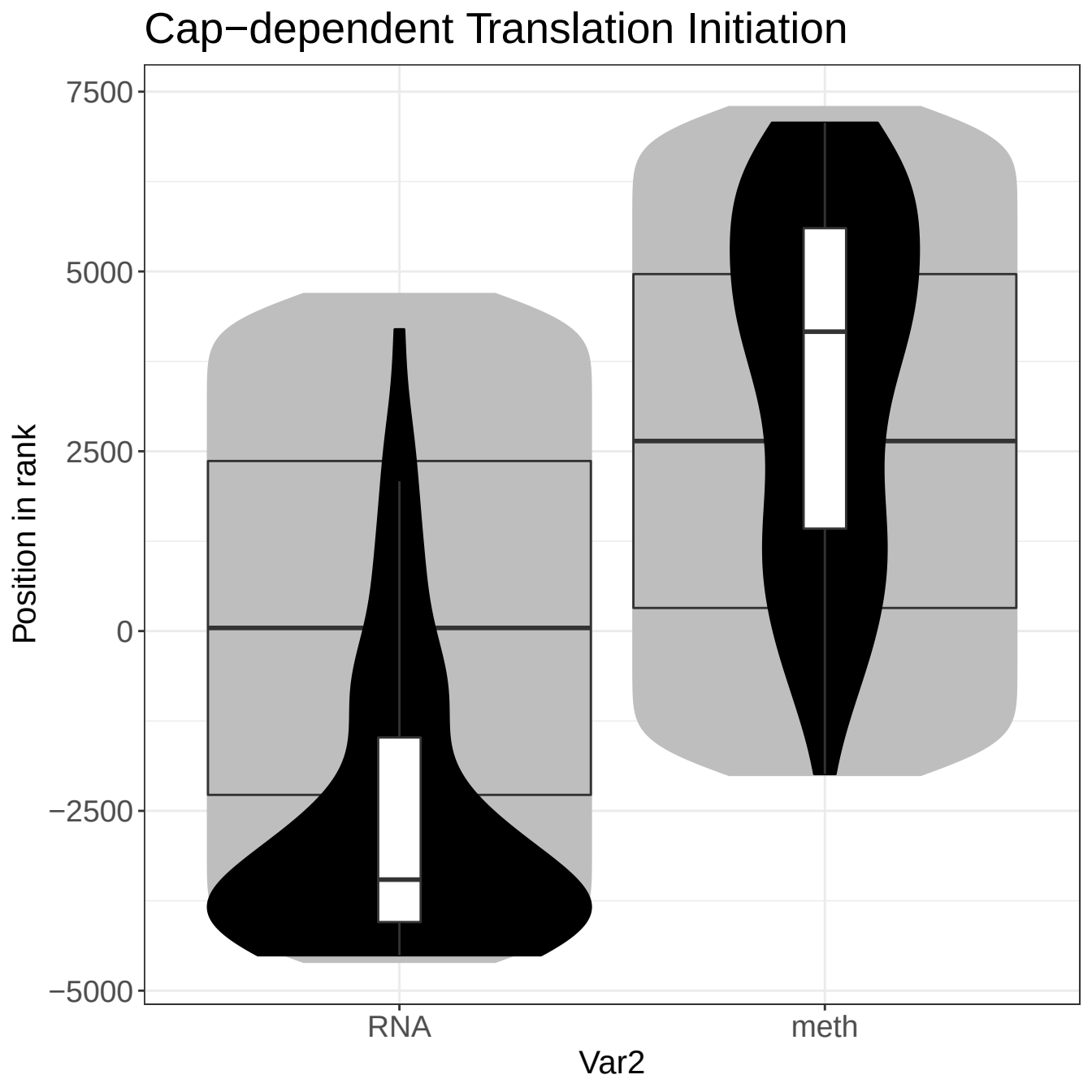

Major pathway of rRNA processing in the nucleolus and cyt
6000
4000
2000
0
−2000
Rank in contrast meth
−4000
−2000
0
2000
4000
Rank in contrast RNA
4e−08
3e−08
2e−08
1e−08
0e+00

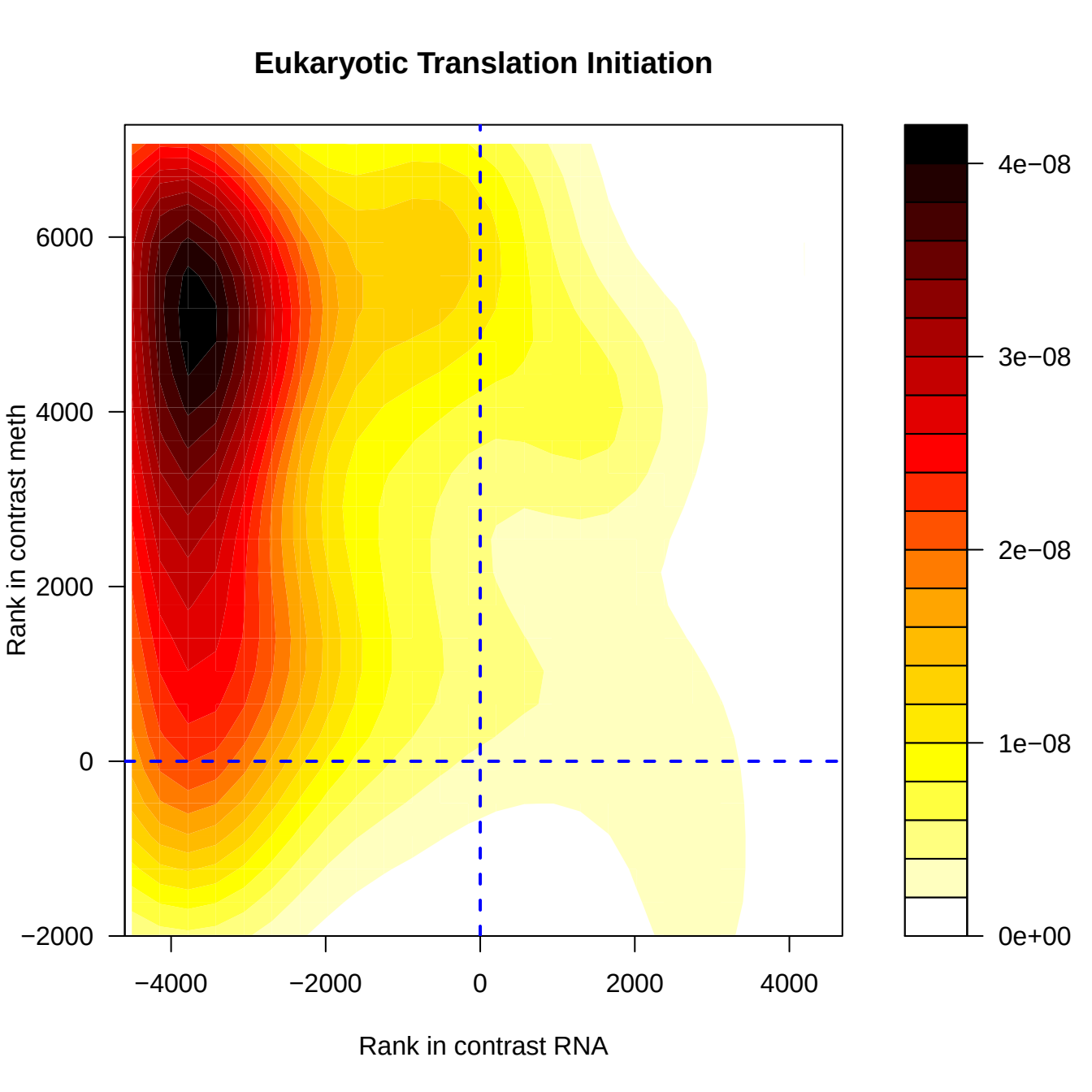

Major pathway of rRNA processing in the nucleolus and cytosol
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

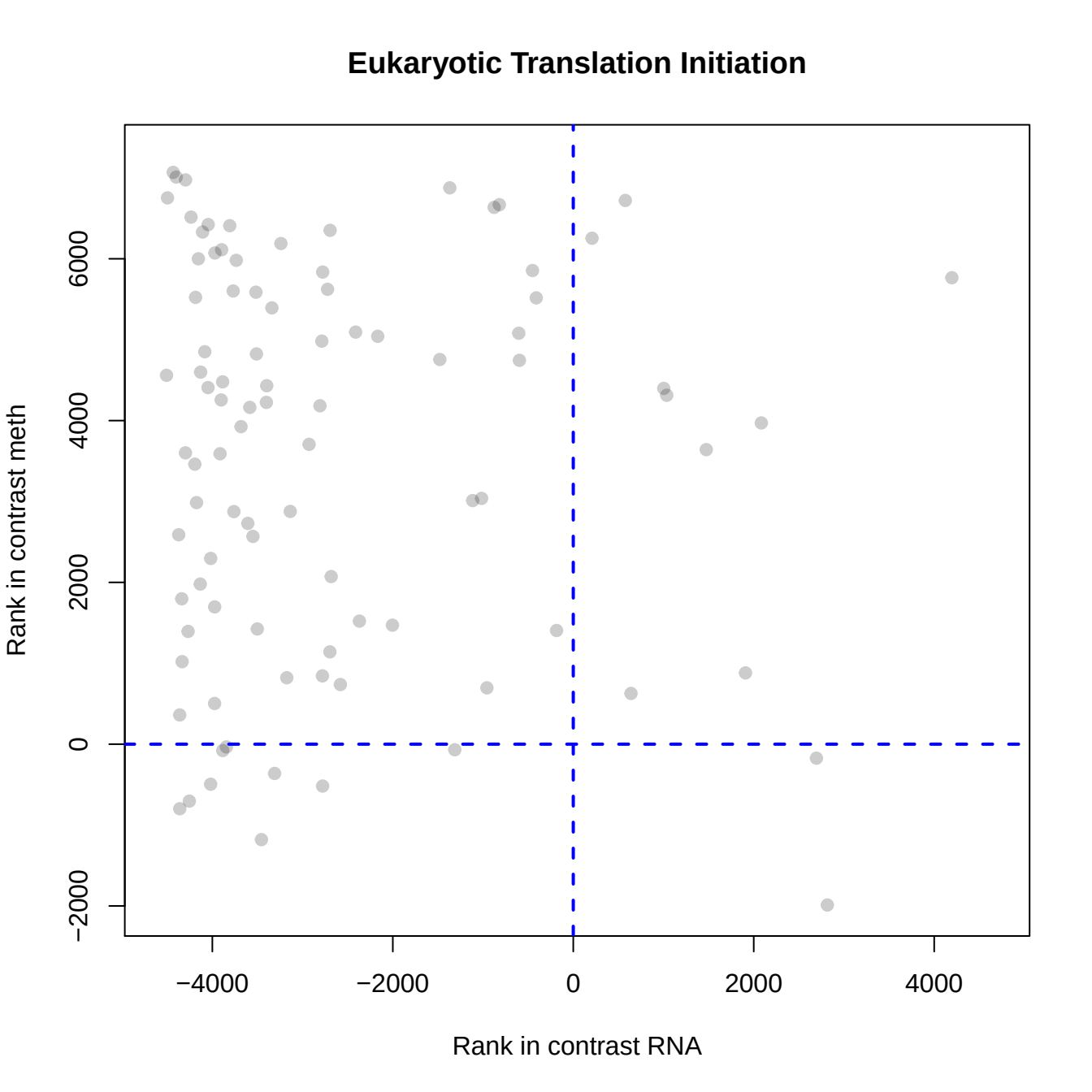

Major pathway of rRNA processing in the nucleolu
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

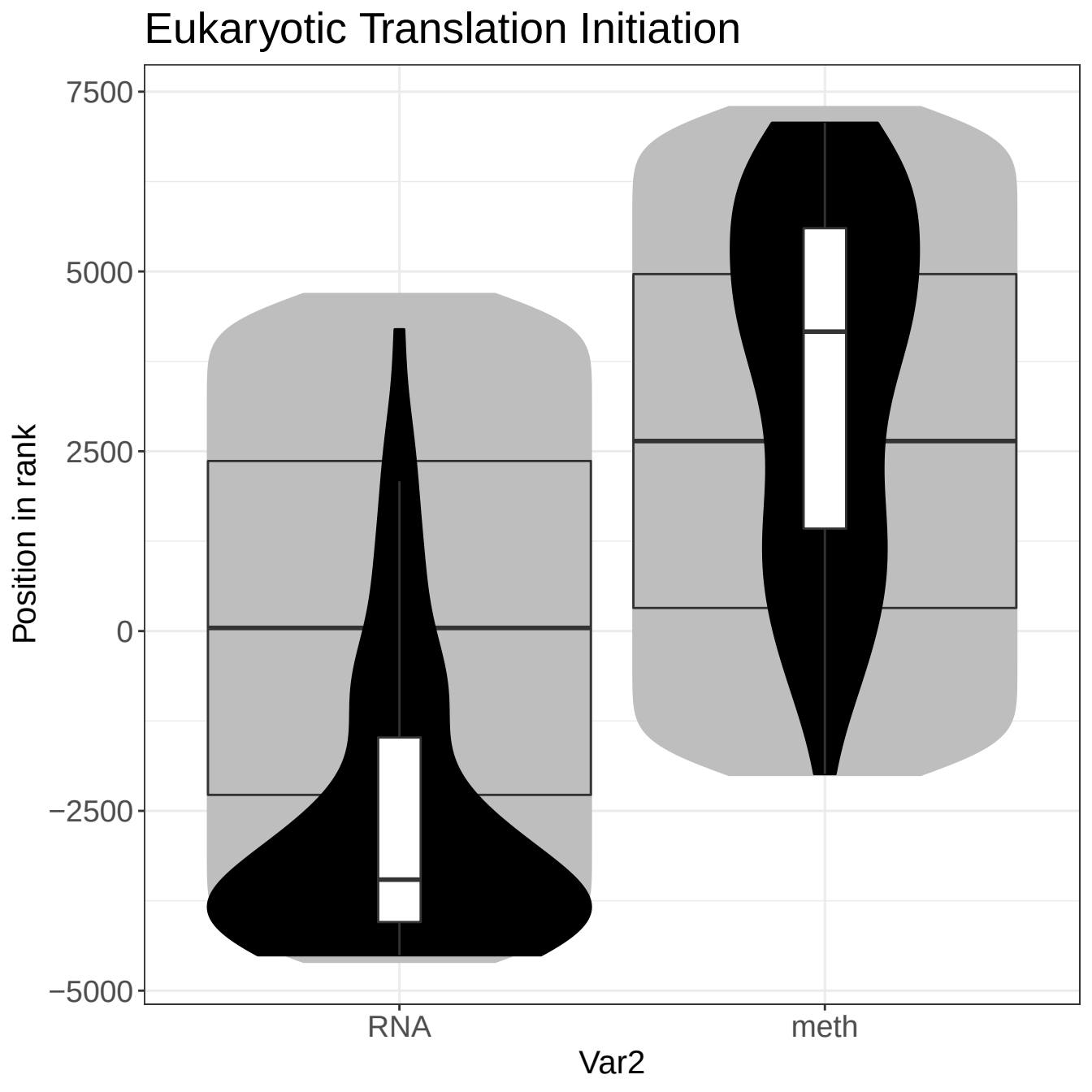

Cap−dependent Translation Initiation
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
4e−08
3e−08
2e−08
1e−08
0e+00

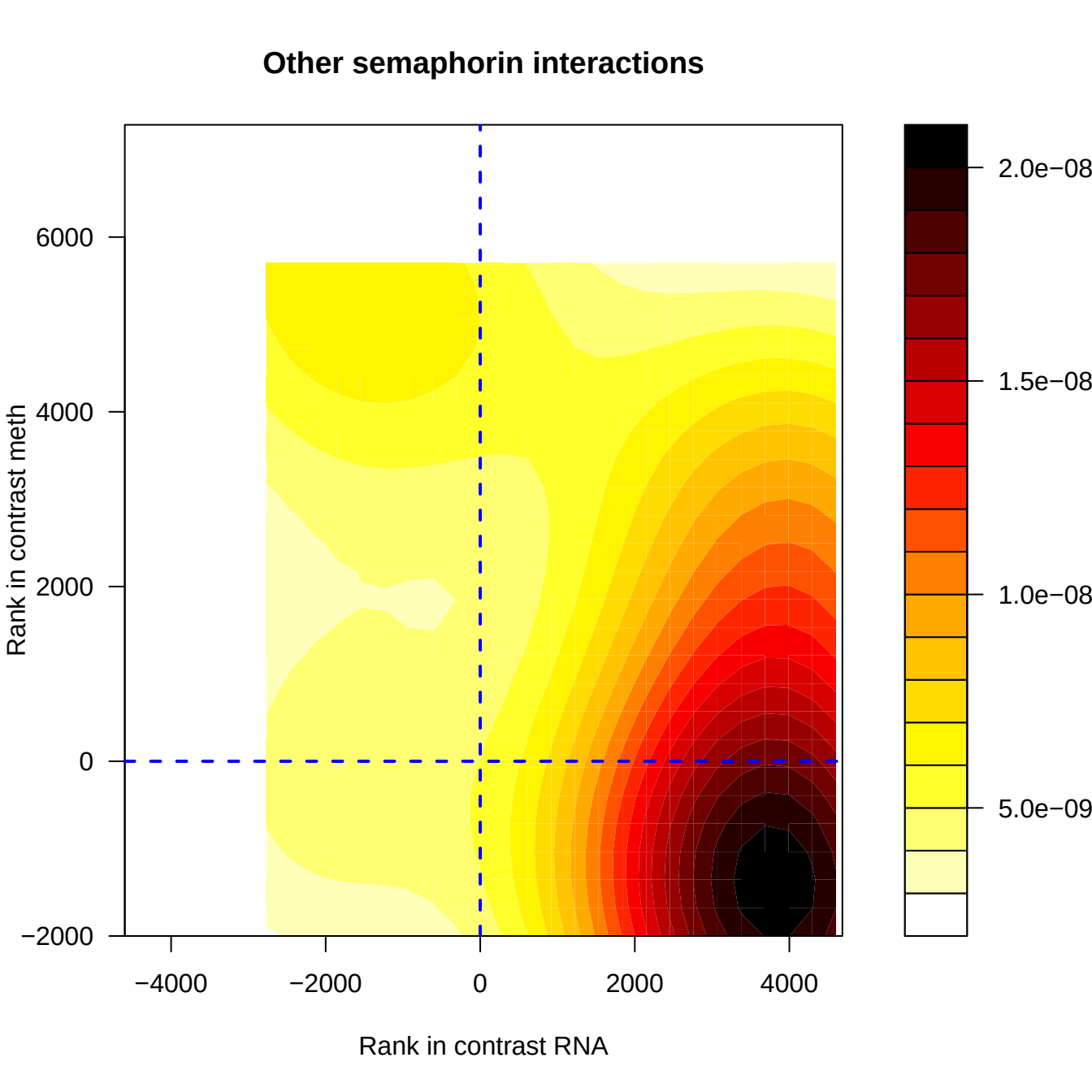

Cap−dependent Translation Initiation
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

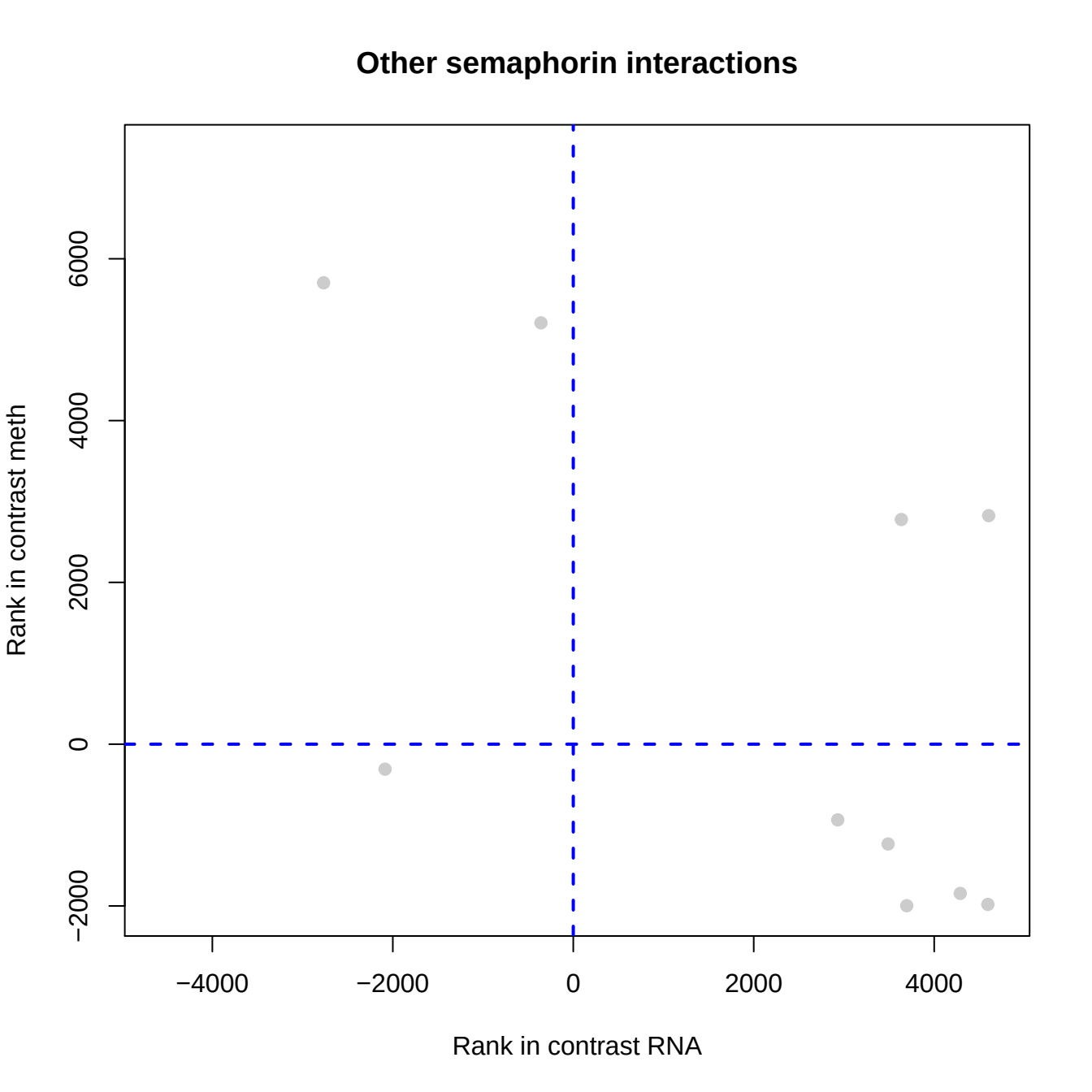

Cap−dependent Translation Initiation
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

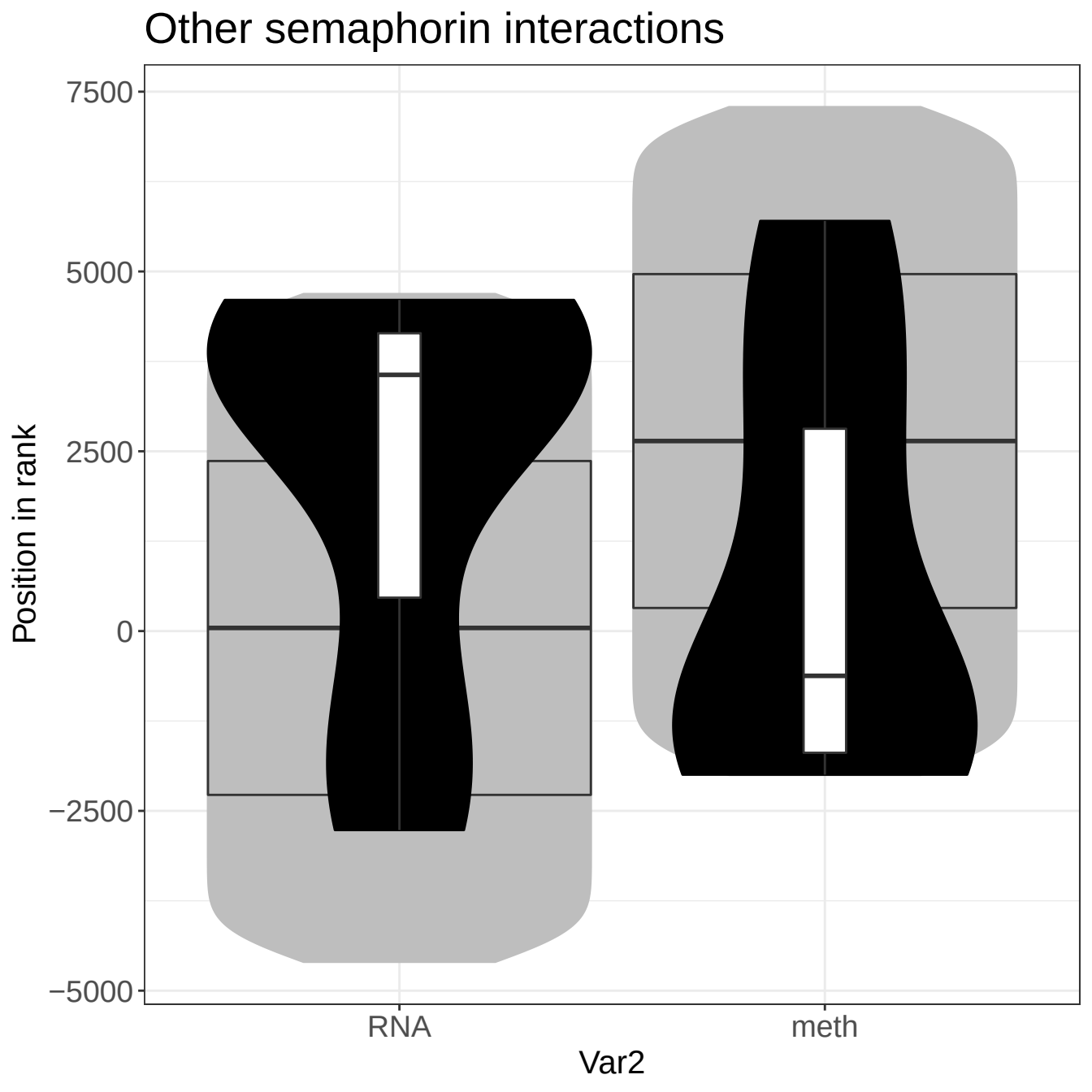

Eukaryotic Translation Initiation
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
4e−08
3e−08
2e−08
1e−08
0e+00

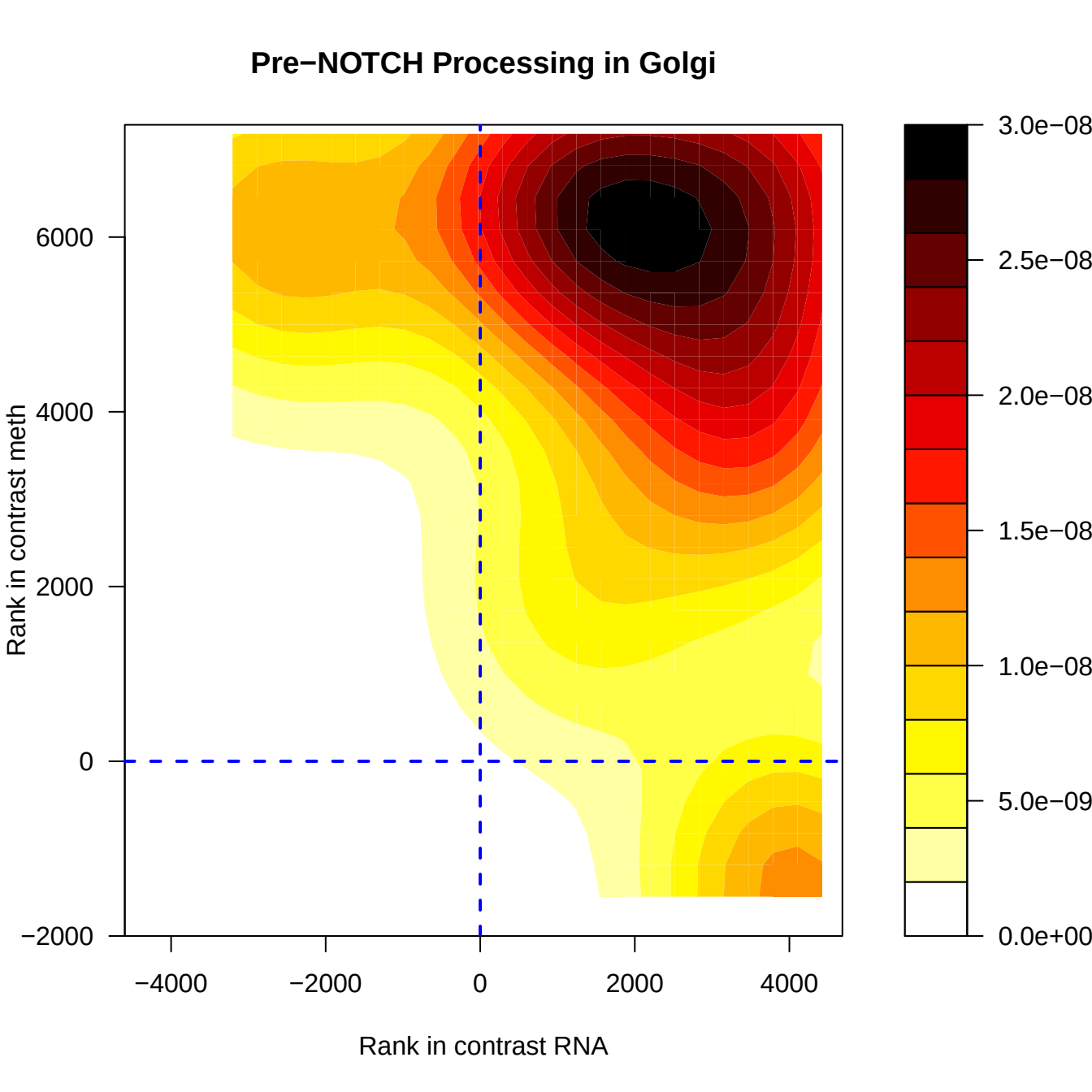

Eukaryotic Translation Initiation
Rank in contrast meth
Rank in contrast RNA
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000

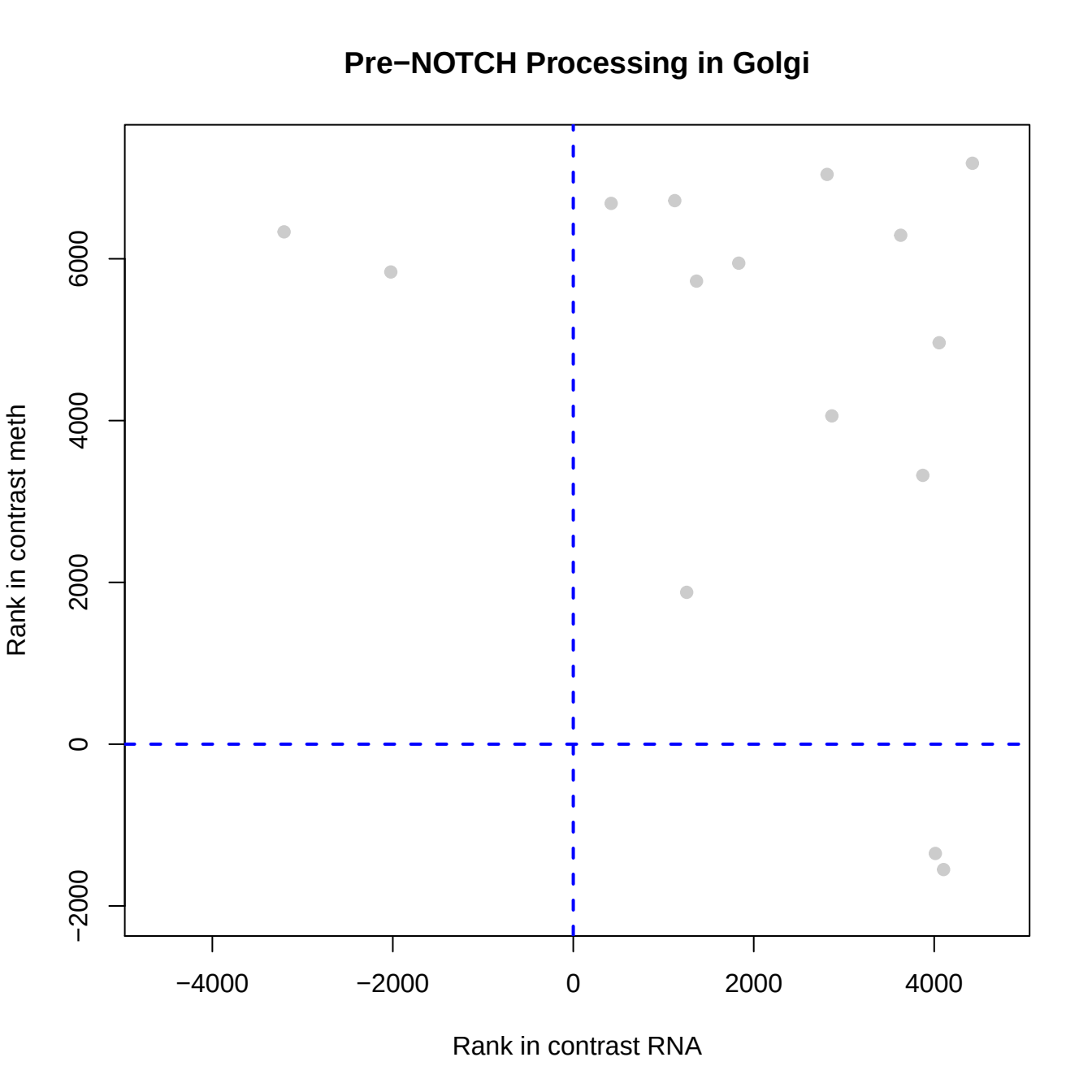

Eukaryotic Translation Initiation
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

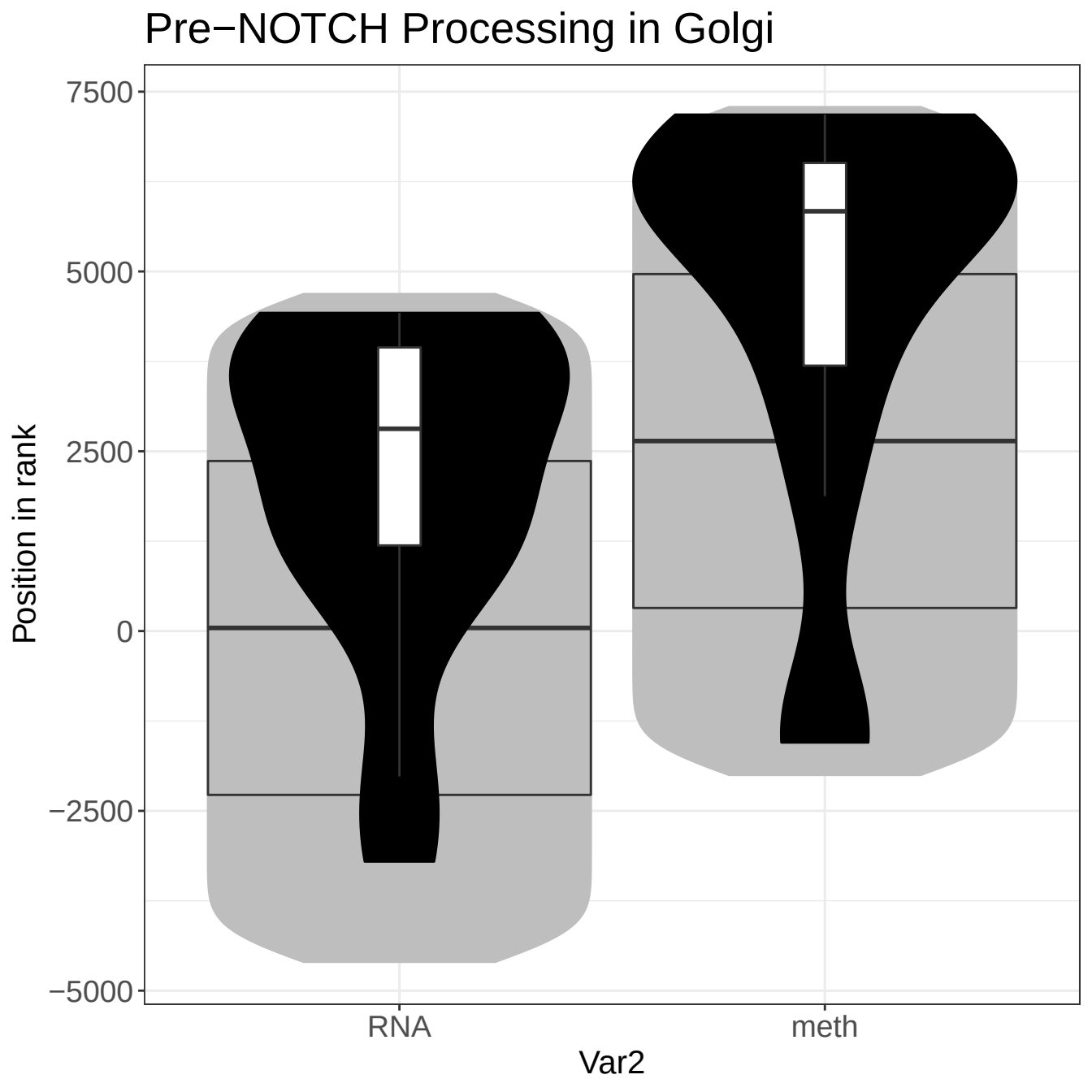

Other semaphorin interactions
6000
4000
2000
0
−2000
Rank in contrast meth
−4000
−2000
0
2000
4000
Rank in contrast RNA
2.0e−08
1.5e−08
1.0e−08
5.0e−09

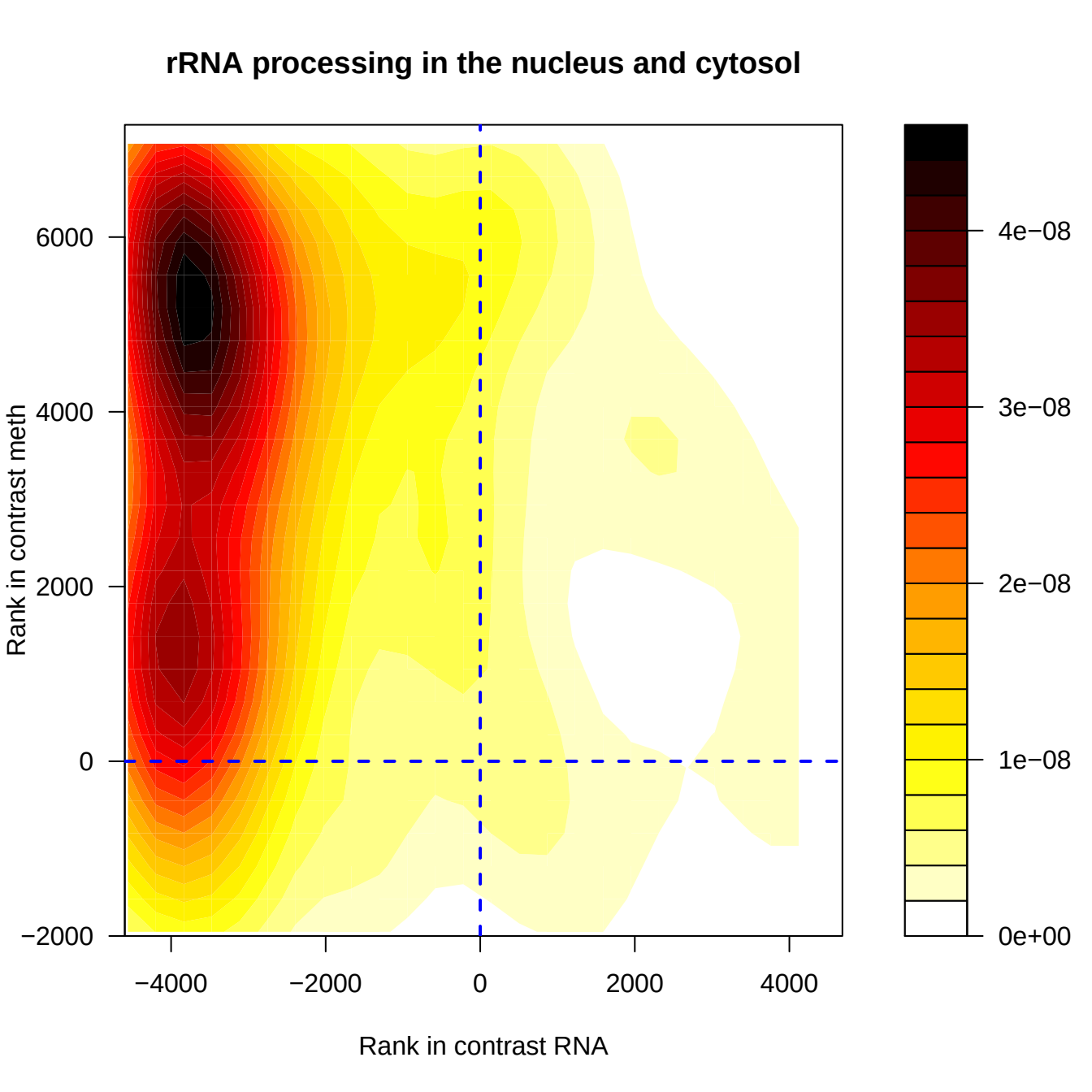

Other semaphorin interactions
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

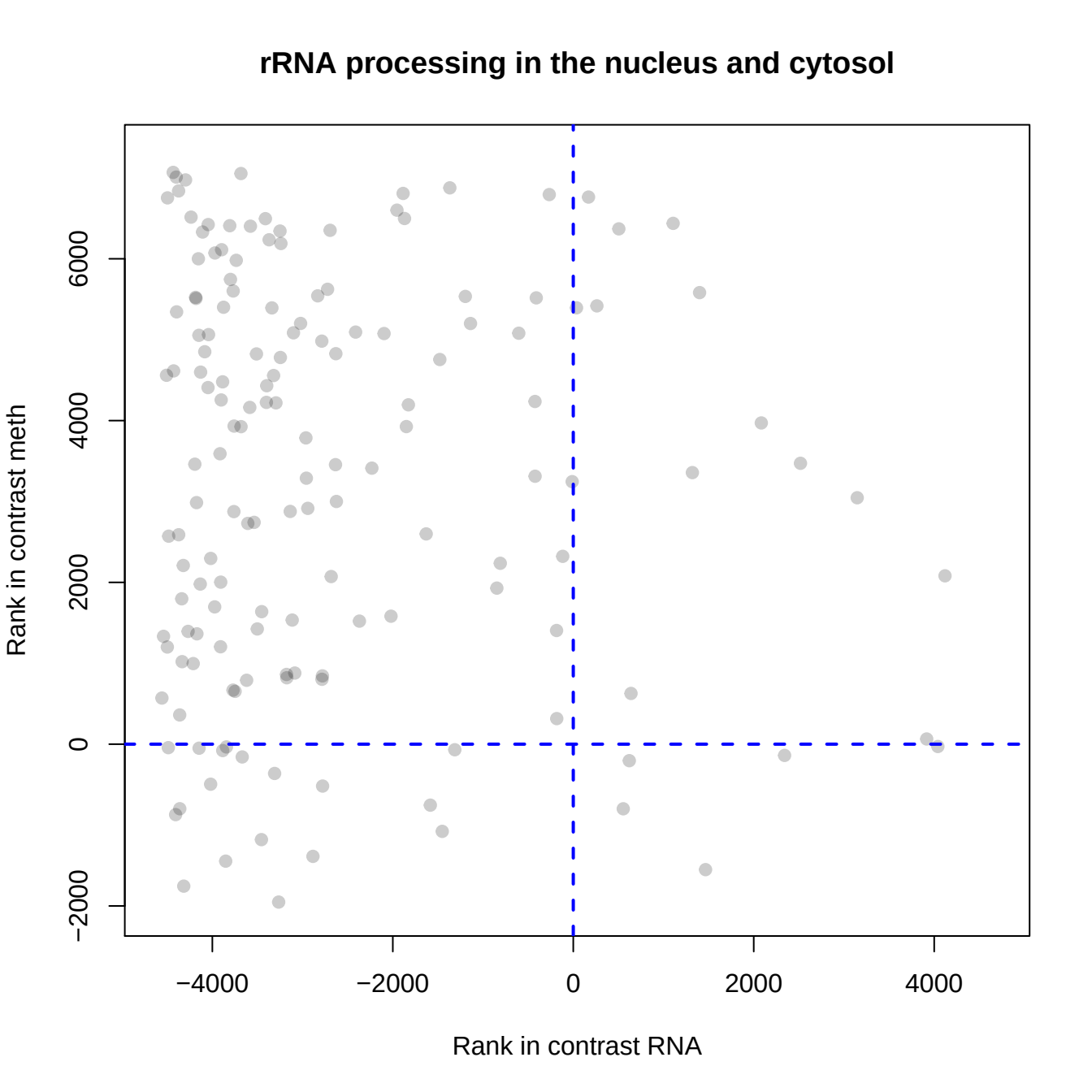

Other semaphorin interactions
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

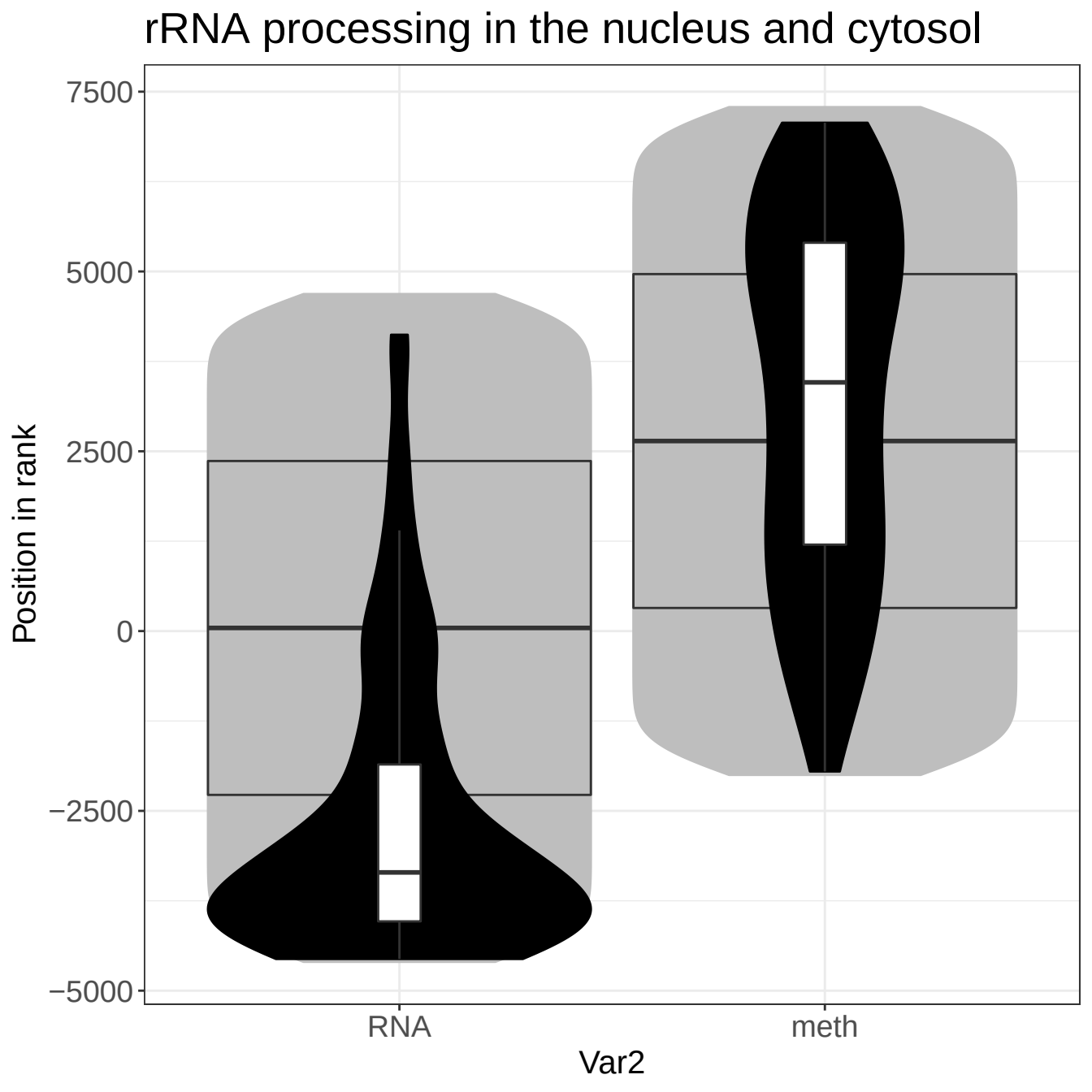

Pre−NOTCH Processing in Golgi
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
3.0e−08
2.5e−08
2.0e−08
1.5e−08
1.0e−08
5.0e−09
0.0e+00

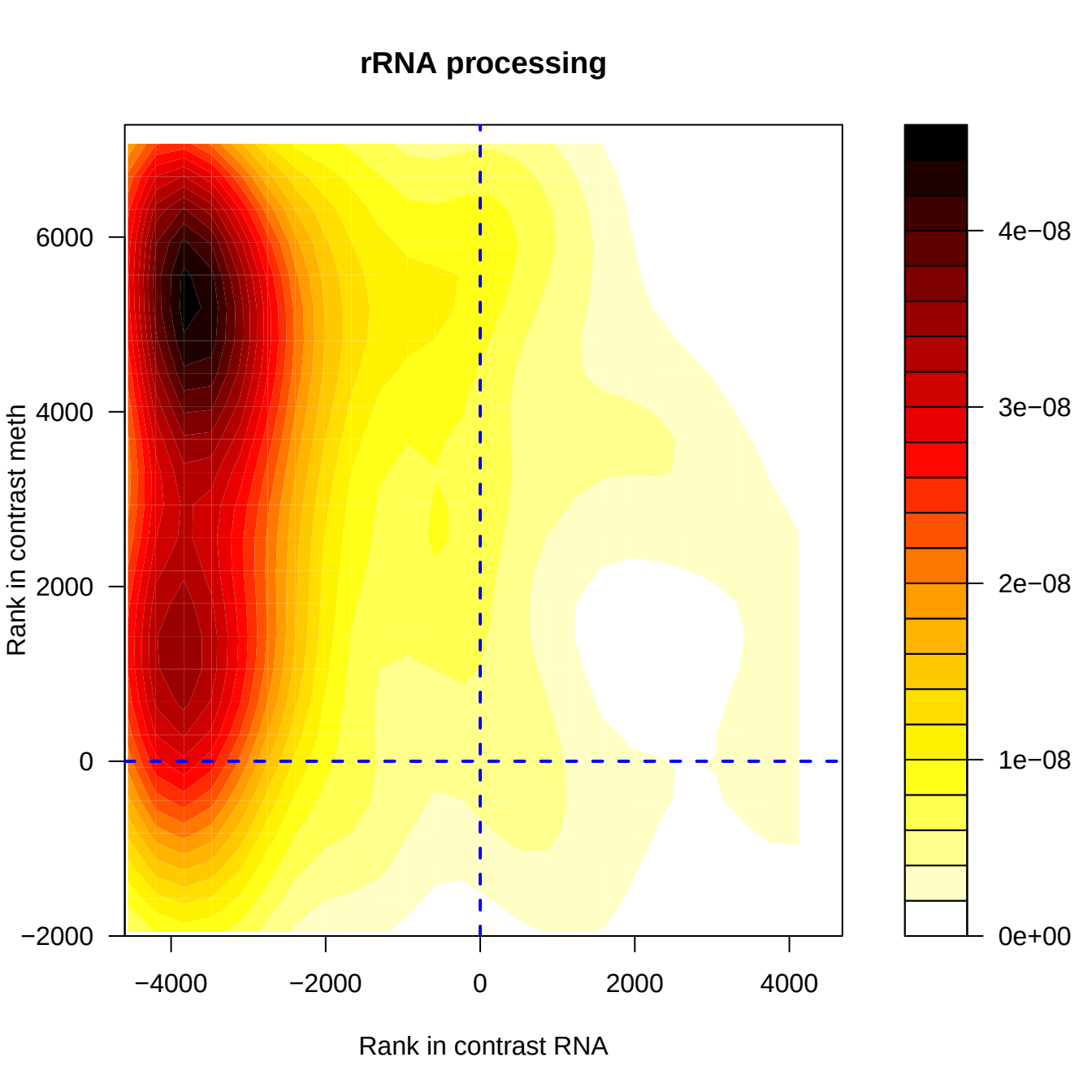

Pre−NOTCH Processing in Golgi
Rank in contrast meth
Rank in contrast RNA
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000

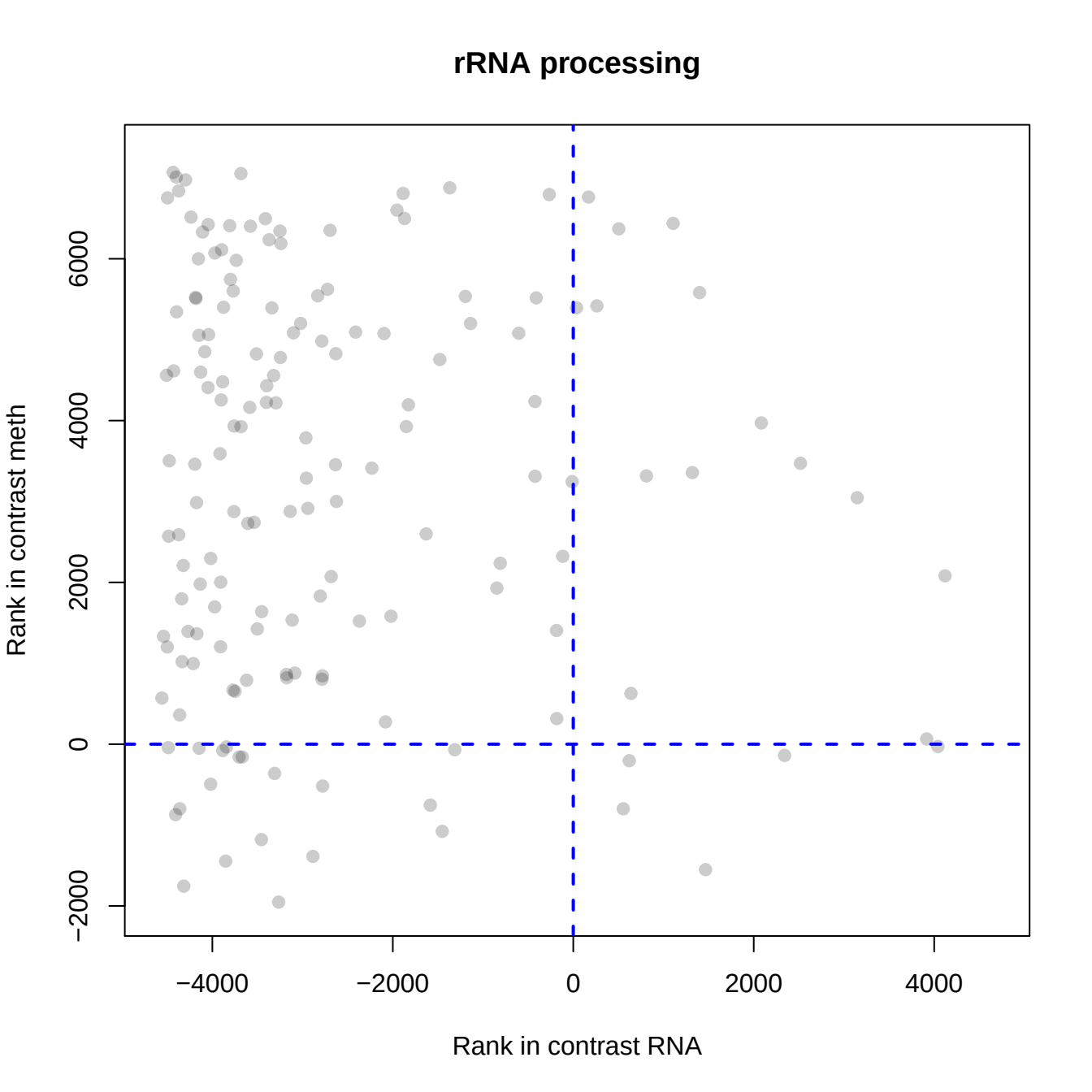

Pre−NOTCH Processing in Golgi
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

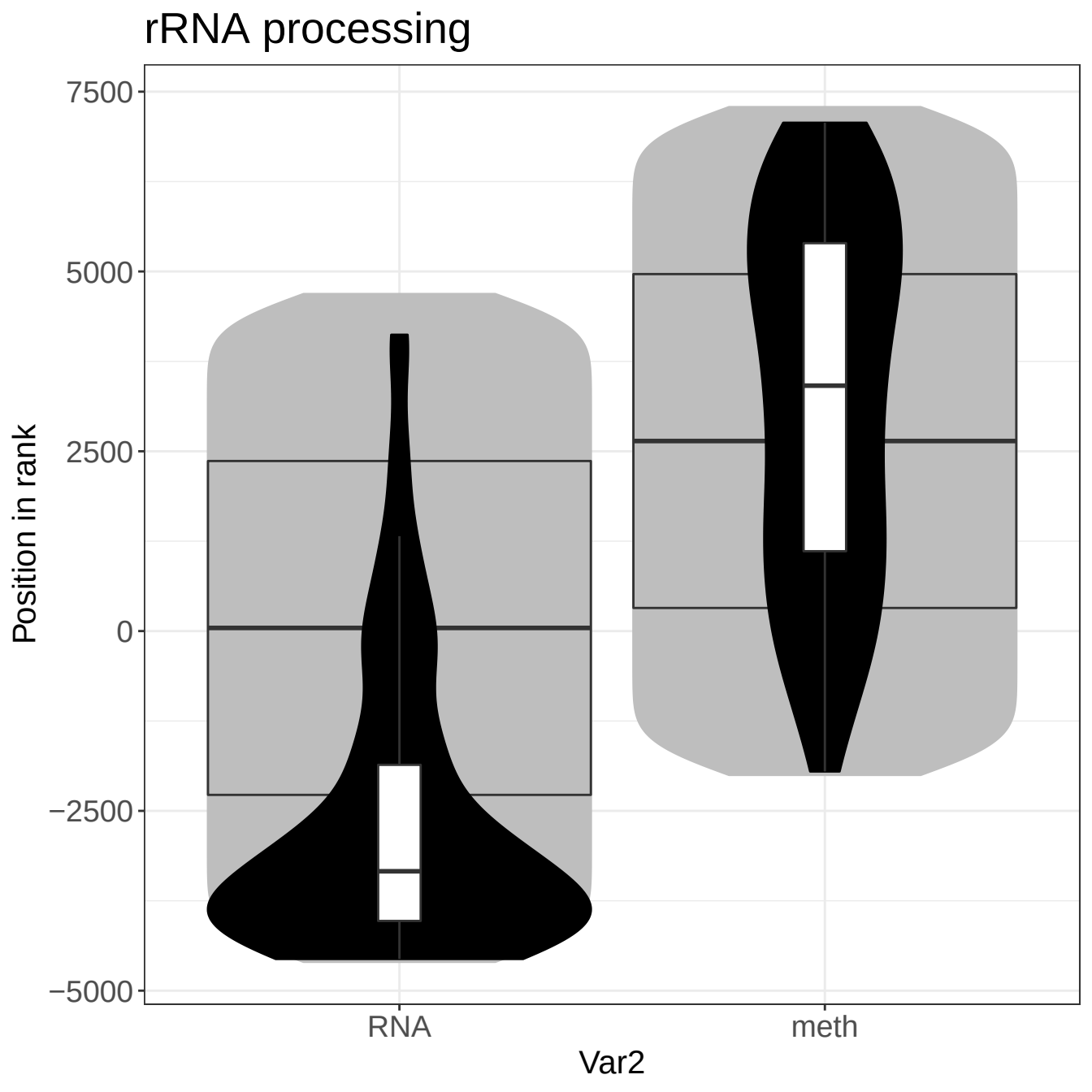

rRNA processing in the nucleus and cytosol
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
4e−08
3e−08
2e−08
1e−08
0e+00

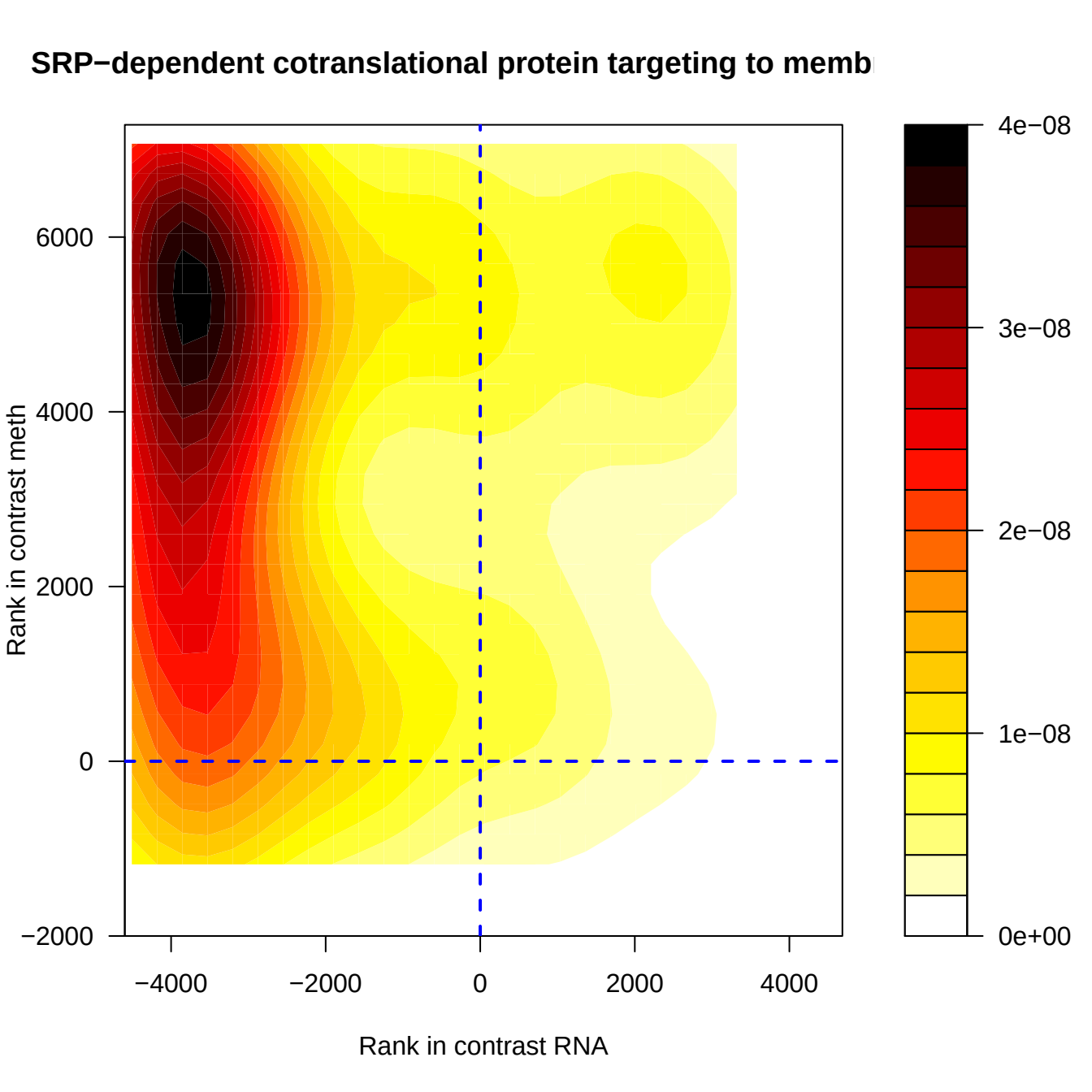

rRNA processing in the nucleus and cytosol
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

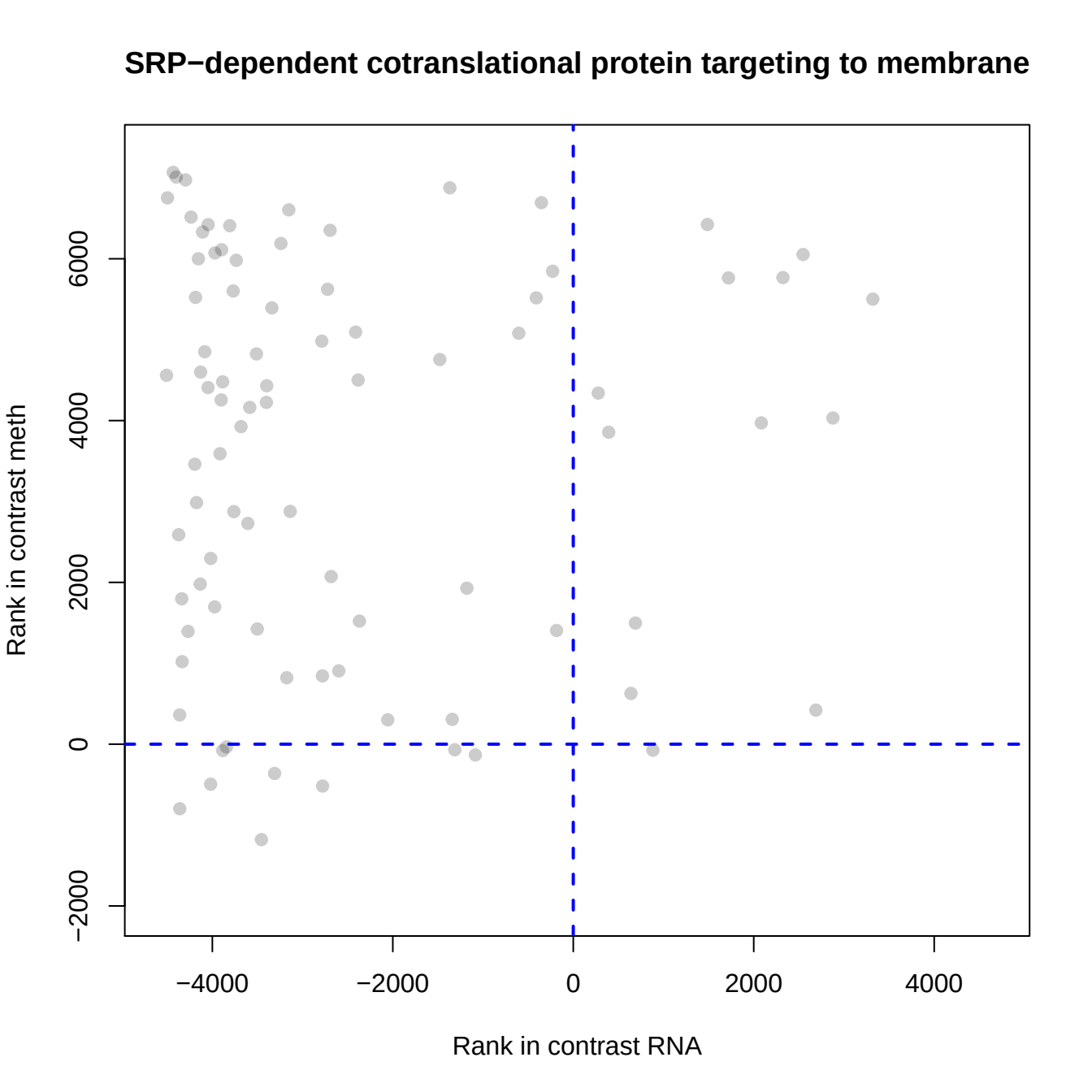

rRNA processing in the nucleus and cytosol
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

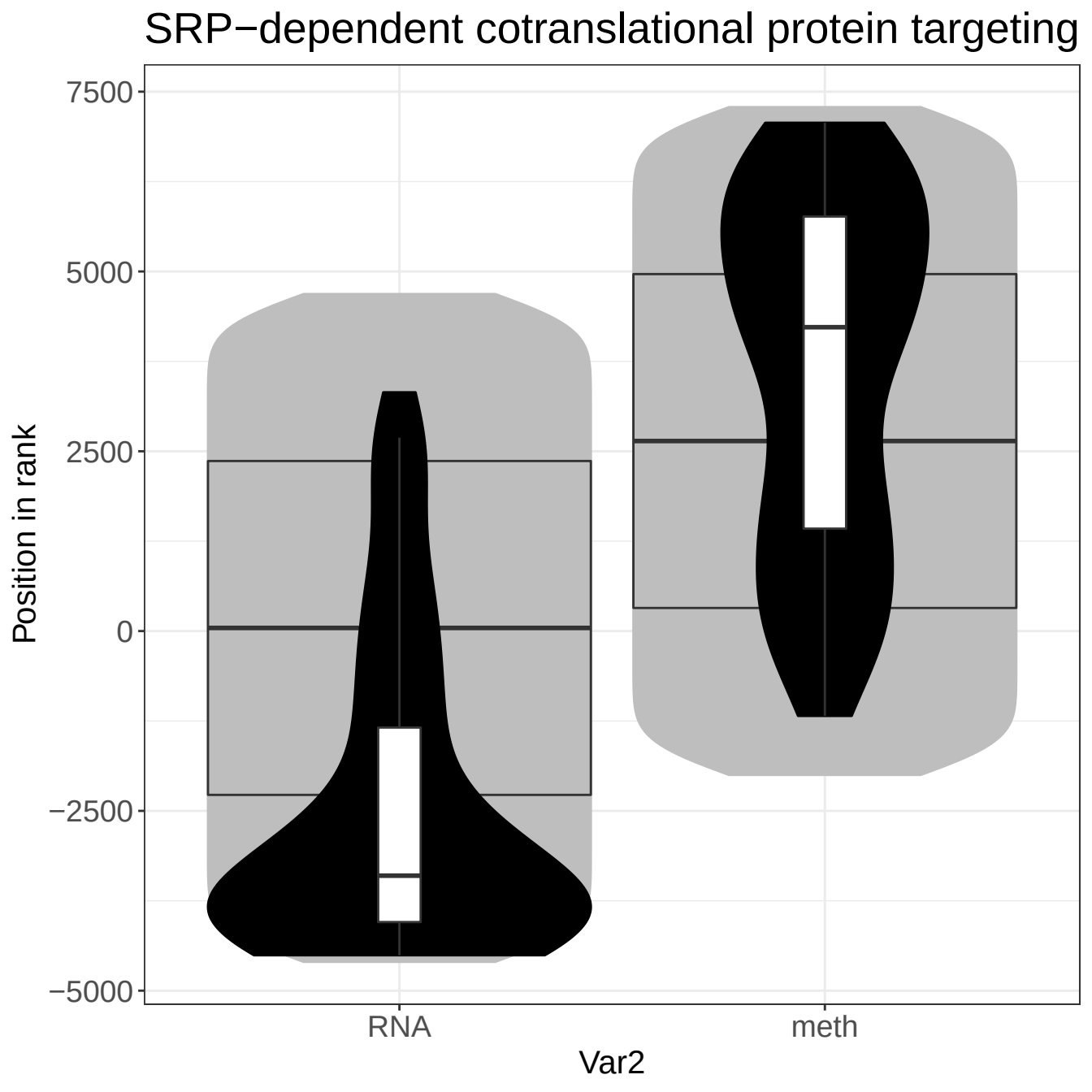

rRNA processing
6000
4000
2000
0
−2000
Rank in contrast meth
−4000
−2000
0
2000
4000
Rank in contrast RNA
4e−08
3e−08
2e−08
1e−08
0e+00

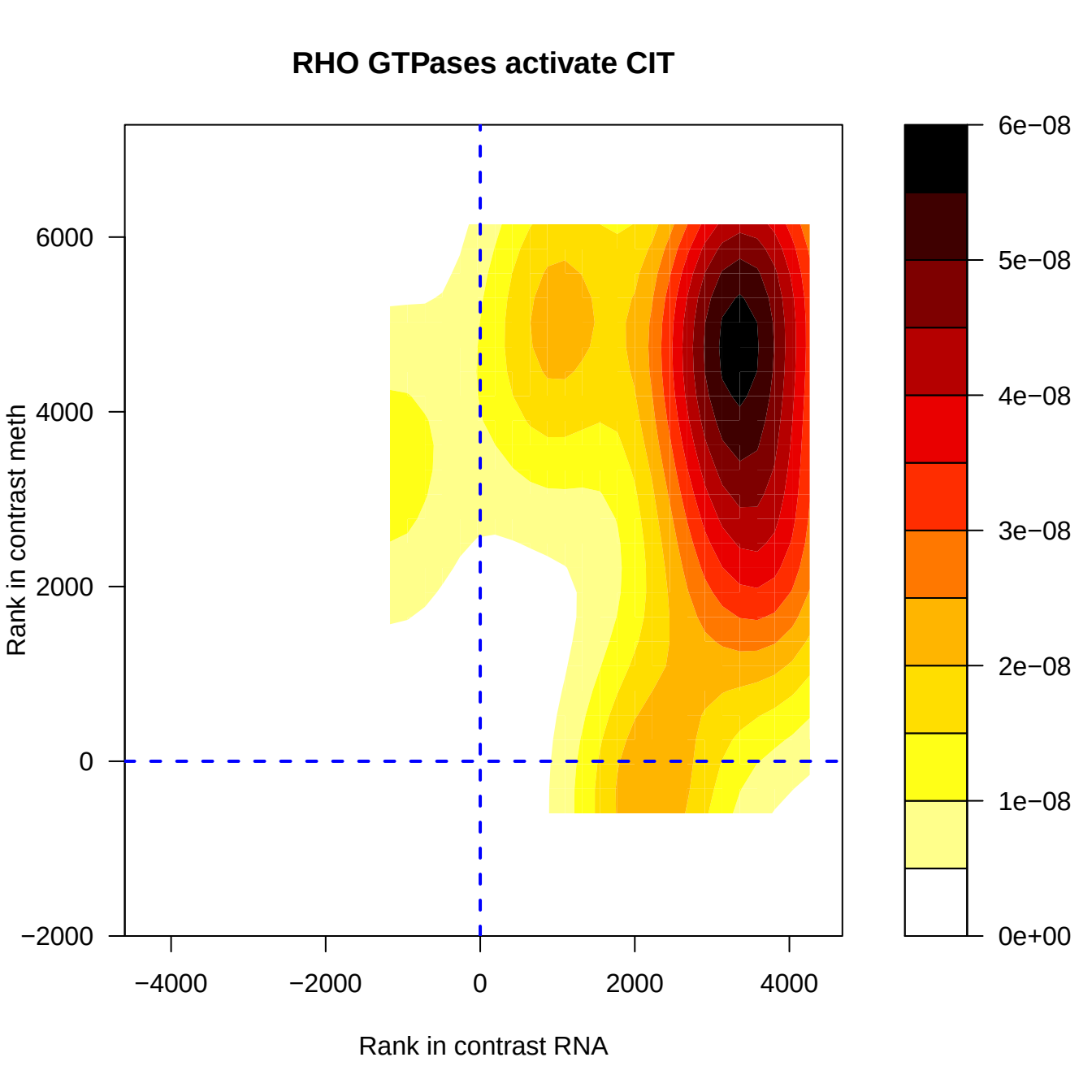

rRNA processing
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

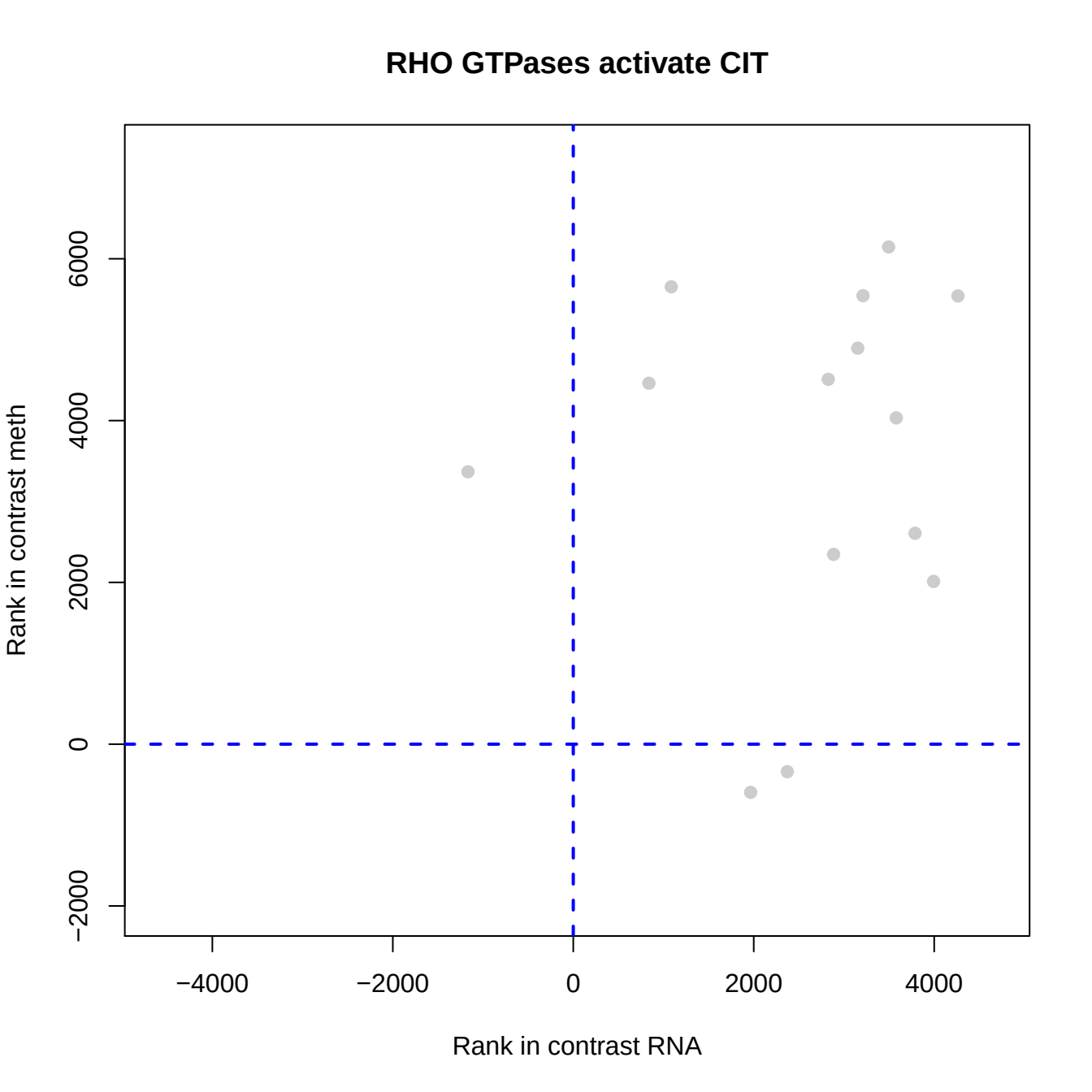

rRNA processing
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

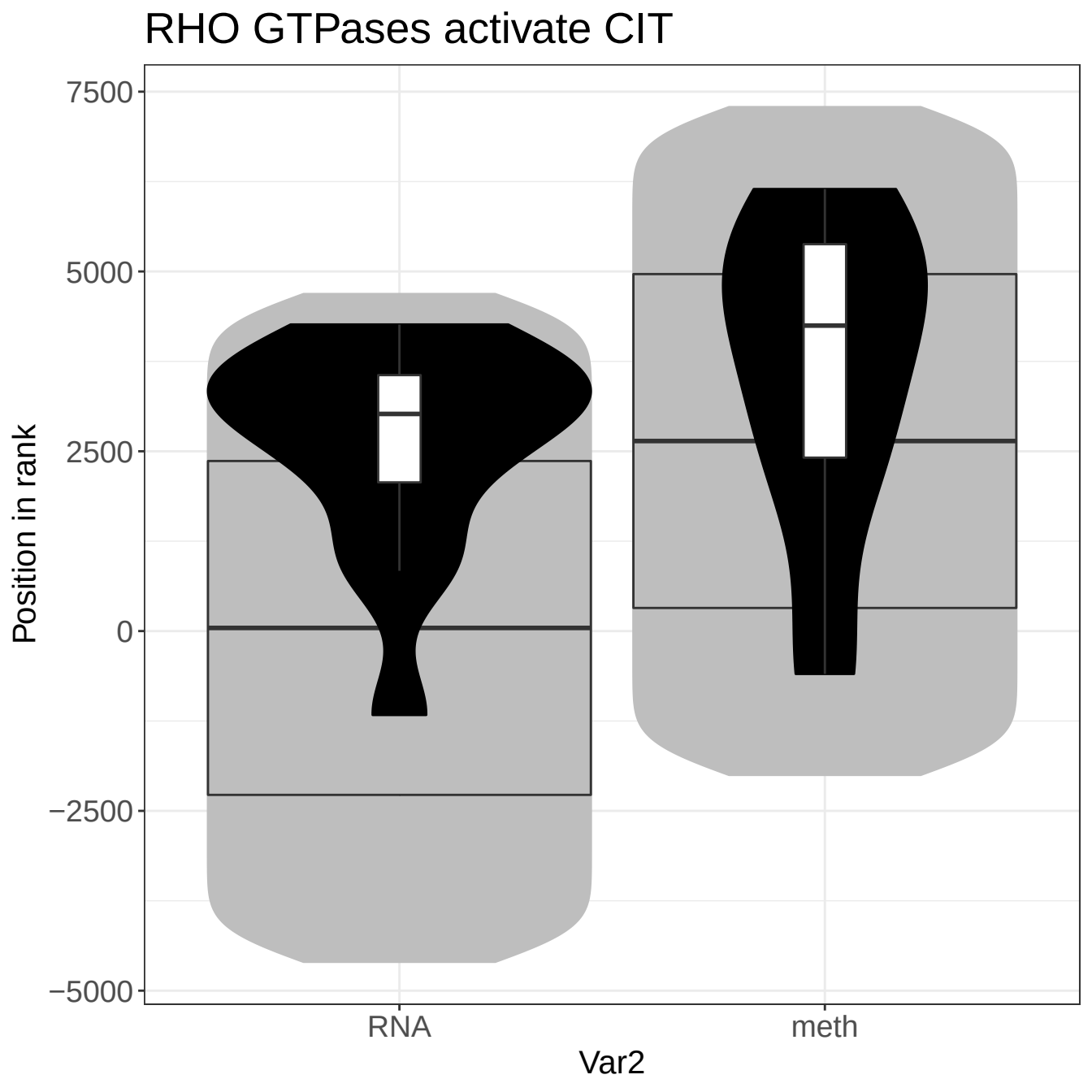

SRP−dependent cotranslational protein targeting to memb
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
4e−08
3e−08
2e−08
1e−08
0e+00

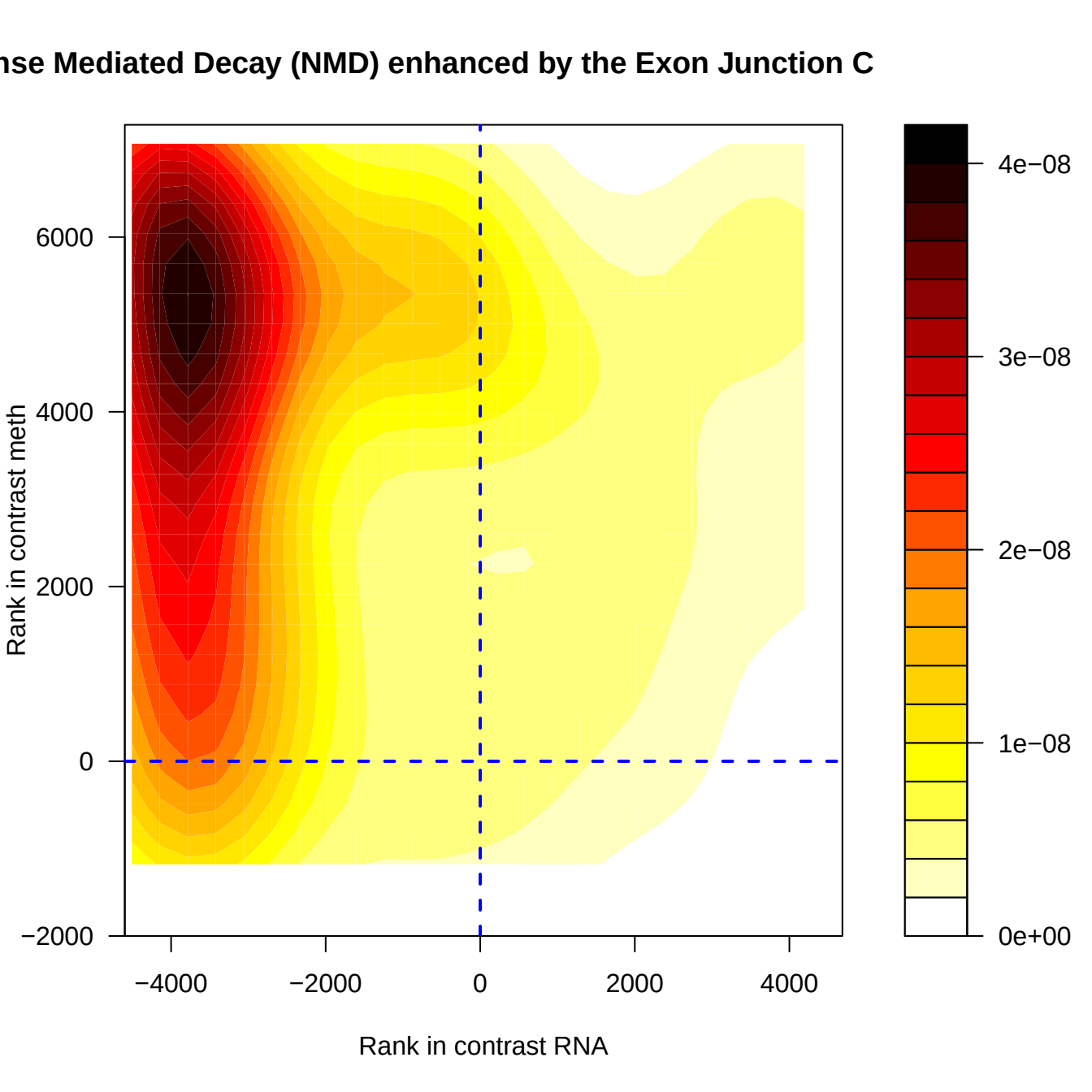

SRP−dependent cotranslational protein targeting to membrane
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

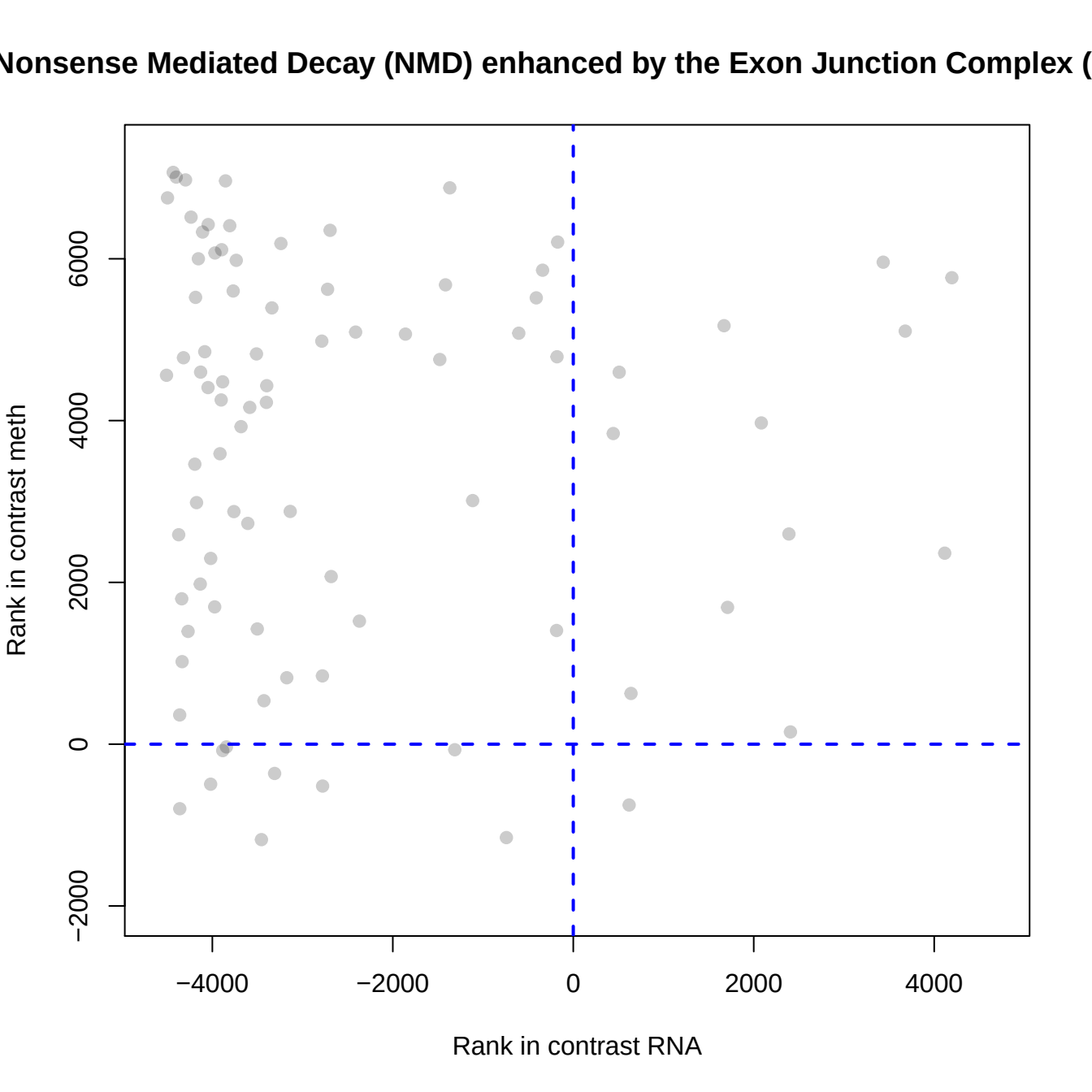

SRP−dependent cotranslational protein targeting
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

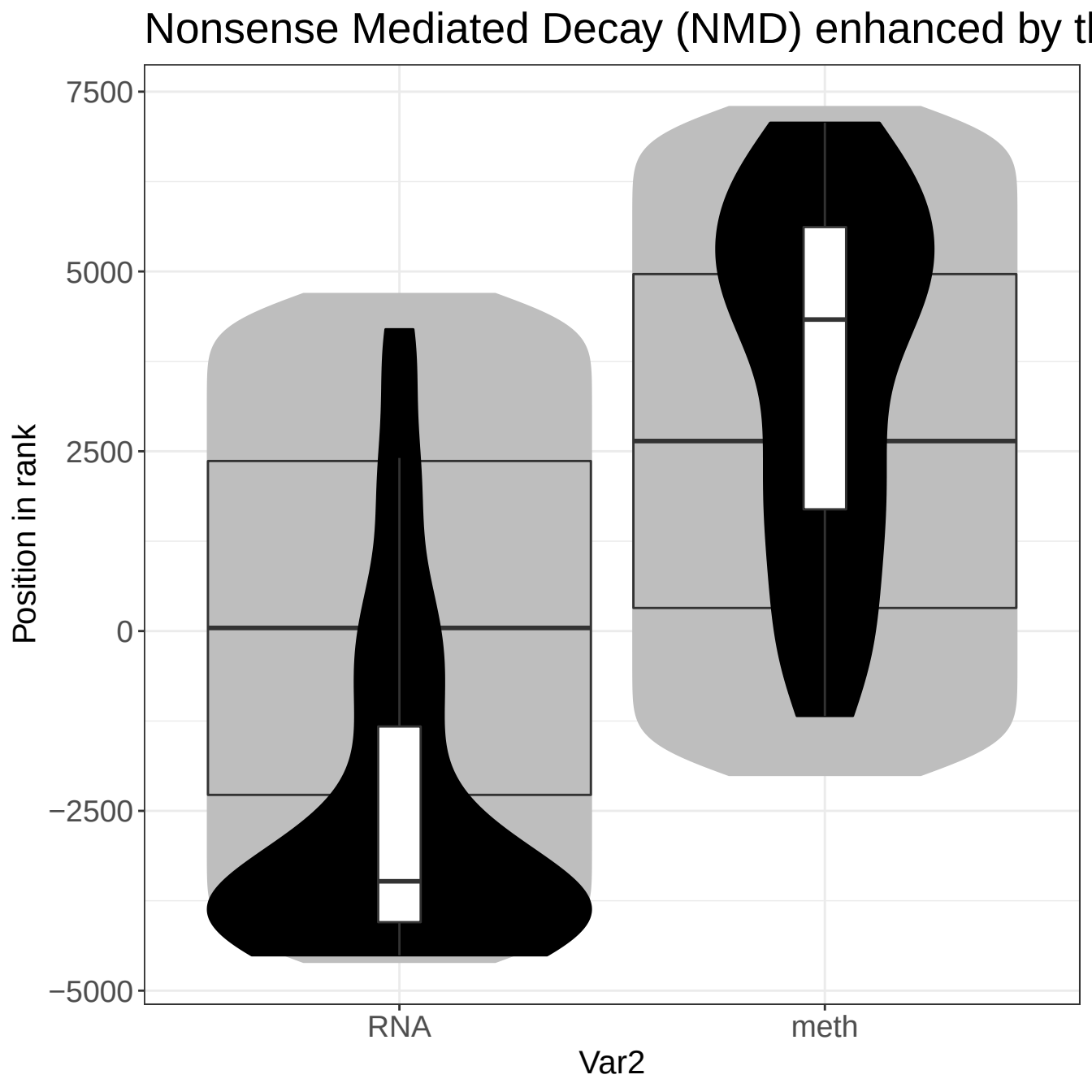

RHO GTPases activate CIT
6000
4000
2000
0
−2000
Rank in contrast meth
−4000
−2000
0
2000
4000
Rank in contrast RNA
6e−08
5e−08
4e−08
3e−08
2e−08
1e−08
0e+00

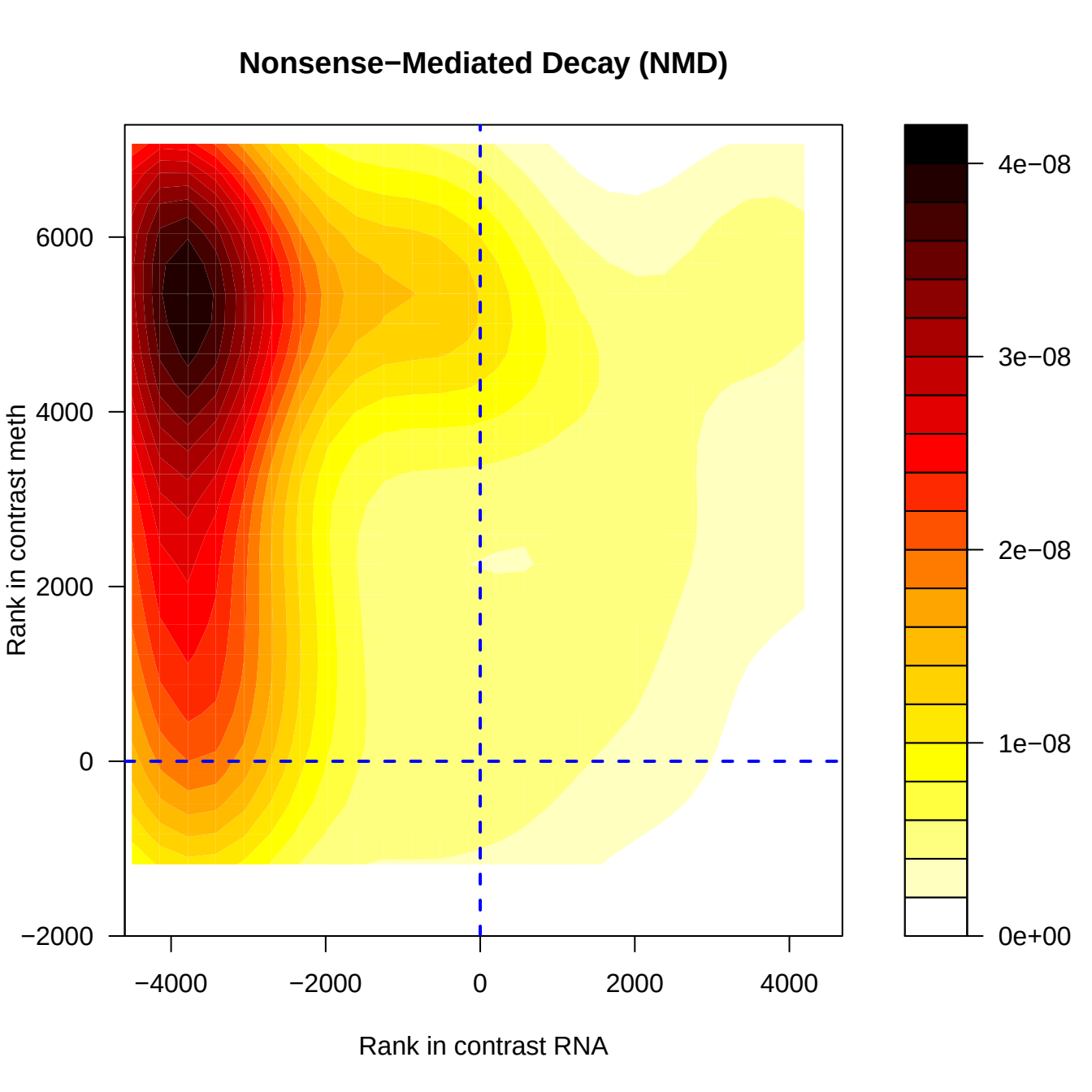

RHO GTPases activate CIT
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA

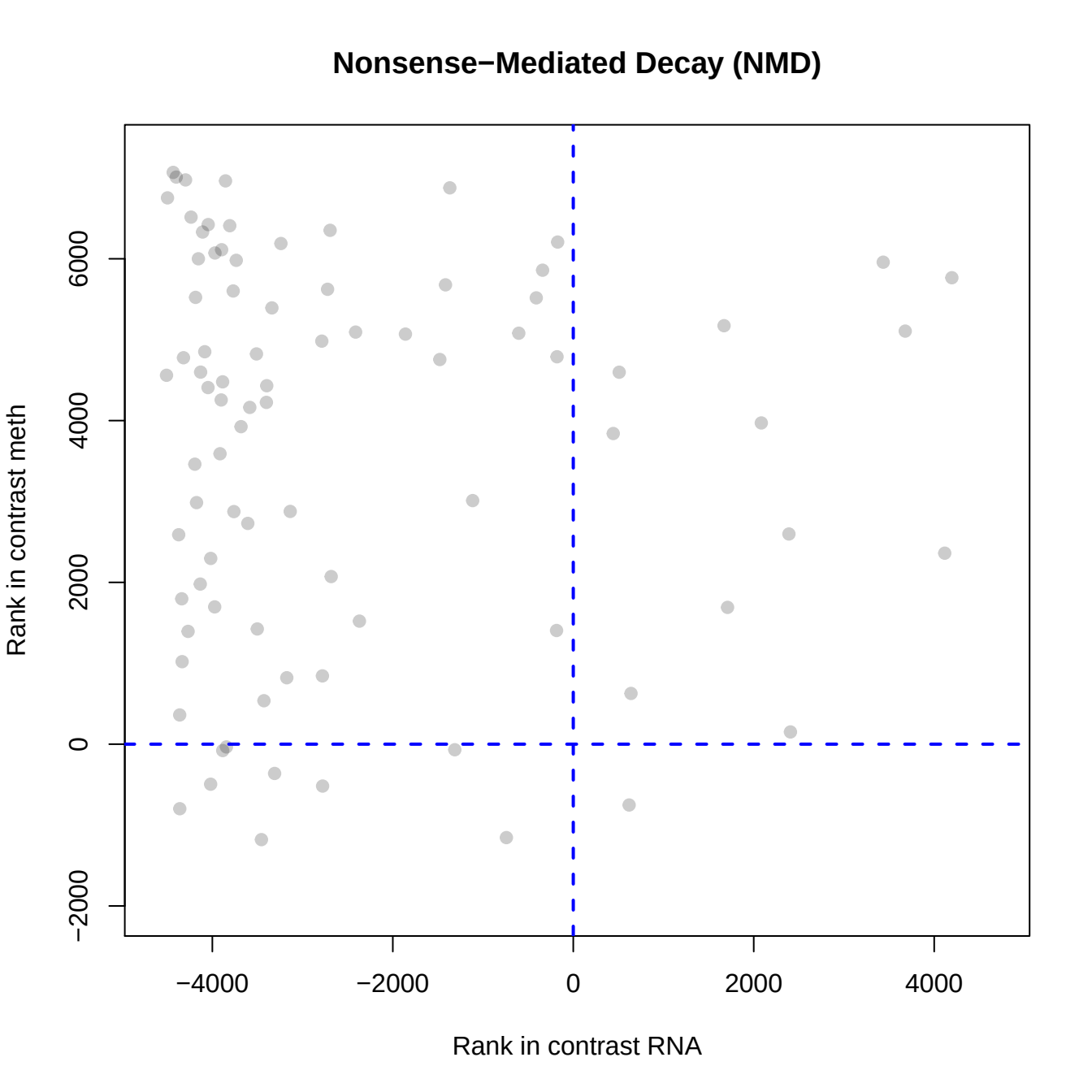

RHO GTPases activate CIT
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2

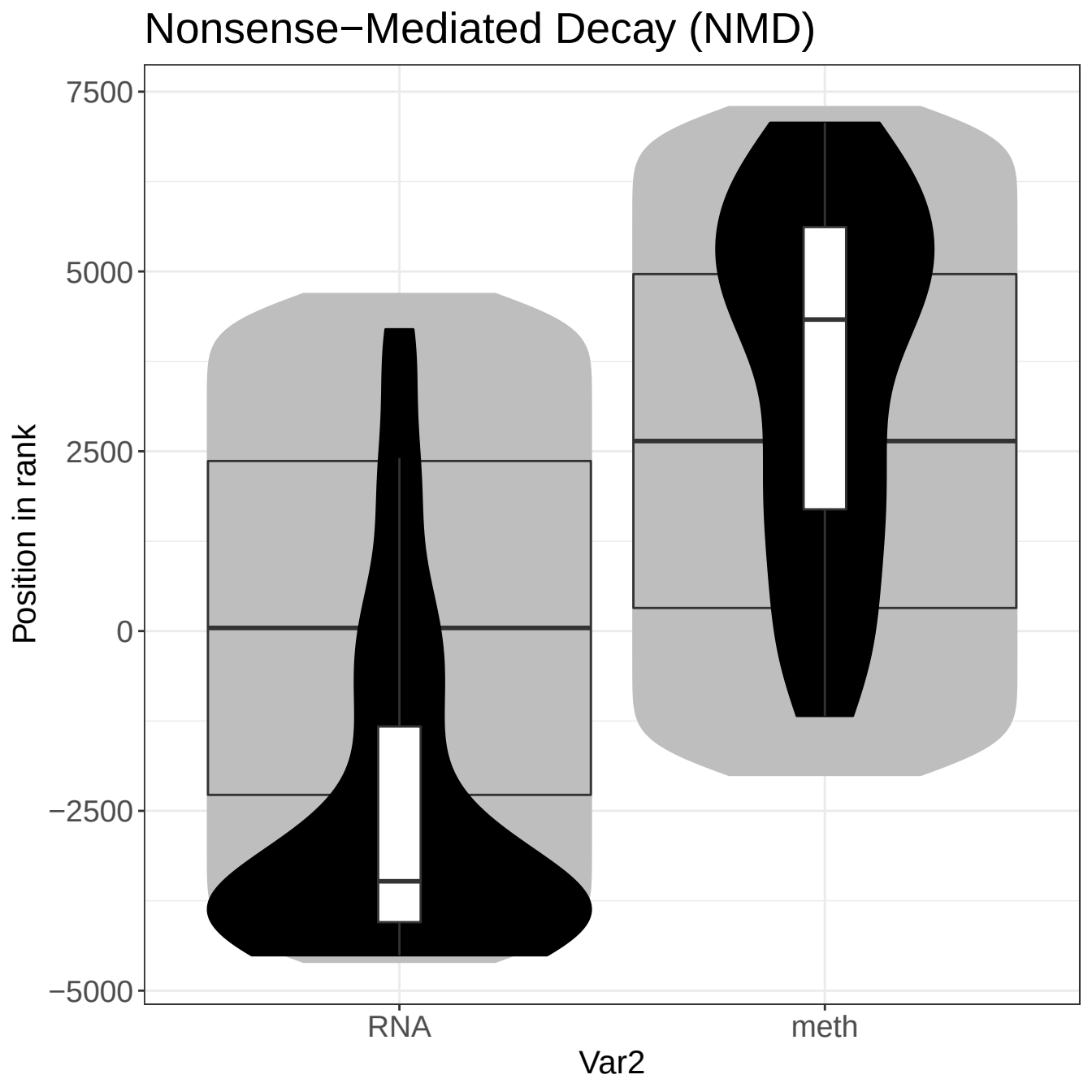

nse Mediated Decay (NMD) enhanced by the Exon Junction C
6000
4000
2000
0
−2000
Rank in contrast meth
−4000
−2000
0
2000
4000
Rank in contrast RNA
4e−08
3e−08
2e−08
1e−08
0e+00


Nonsense Mediated Decay (NMD) enhanced by the Exon Junction Complex (
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA


Nonsense Mediated Decay (NMD) enhanced by t
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2


Nonsense−Mediated Decay (NMD)
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA
4e−08
3e−08
2e−08
1e−08
0e+00


Nonsense−Mediated Decay (NMD)
Rank in contrast meth
6000
4000
2000
0
−2000
−4000
−2000
0
2000
4000
Rank in contrast RNA


Nonsense−Mediated Decay (NMD)
7500
5000
2500
0
−2500
−5000
Position in rank
RNA
meth
Var2