# Comparison of introns grouped into: UP-INTRONS-TAF2, DOWN-INTRONS-TAF2, UP-INTRONS-TAF2dIDR, DOWN-INTRONS-TAF2dIDR, CR, CS, AS-NC

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Matt version 1.3.0

## Contents

# 1 Infos

Visualizations of intron features for different groups of introns. Each intron occurs in exactly one gene, but might occur in several transcripts of that gene. Hence, for some features like the intron length, there is exactly one value for each intron. For other features, e.g., length of the up-stream exon(s), which could be different in different transcripts, there might be several values for each intron. Consequently, in the latter cases, the median of these value gets reported.

# 2 Warning: Please read this note carefully

Please keep in mind that some features might affect other features. Especially: all branch-point features get extracted from sub-sequences of introns, by standard the last 150 nt at the 3' end of each intron (if you haven't changed this) always neglecting the first 20 nt at their 5' end. If introns of one set are especially short, i.e., many are shorter then these 150 nt, then the shorter intron length might affect branch-point features. For example, there might be less branch points found in shorter introns or their distance to the 3' intron ends might be generally shorter simply because of their shorter intron length.

# 3 Notes for publishing results

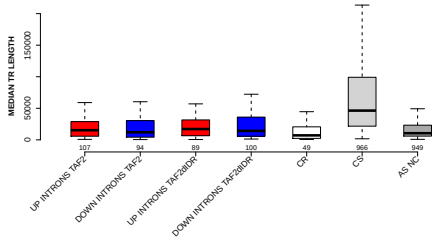
The Matt paper: *Matt: Unix tools for alternative splicing analysis, A. Gohr, M. Irimia, Bioinformatics, 2018, bty606, DOI: 10.1093/bioinformatics/bty606*
When publishing results wrt. splice site strengths which you determined for your data using matt, please cite: *Maximum entropy modeling of short sequence motifs with applications to RNA splicing signals, Yeo et al., 2003, DOI: 10.1089/1066527041410418*
When publishing results wrt. branch point features which you determined for your data with matt, please cite: *Genome-wide association between branch point properties and alternative splicing, Corvelo et al., 2010, DOI: 10.1371/journal.pcbi.1001016*
When publishing results with respect to the binding strength of the human Sf1 splicing factor, you might refert to where the Sf1 binding motif comes from: *Analysis of in situ pre-mRNA targets of human splicing factor SF1 reveals a function in alternative splicing, Margherita Corioni, Nicolas Antih, Goranka Tanackovic, Mihaela Zavolan, and Angela Kramer, 2011, DOI: 10.1093/nar/gkq1042*
The Sf1 binding motif is described in supplement, page 13, table S2: Weight matrix of the binding specificity of SF1.

# 4 Data sets

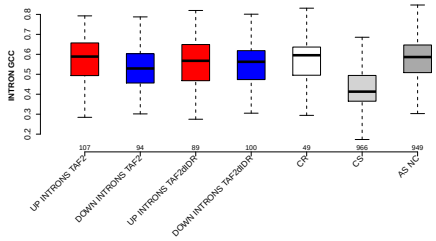
Input file:
MATT_INPUT_INTRONS_TAF2_HeLa.tab
Selection criteria for defining intron groups:
UP_INTRONS_TAF2 : having value UP_INTRONS_TAF2 in column GROUP
DOWN_INTRONS_TAF2 : having value DOWN_INTRONS_TAF2 in column GROUP
UP_INTRONS_TAF2dIDR : having value UP_INTRONS_TAF2dIDR in column GROUP
DOWN_INTRONS_TAF2dIDR : having value DOWN_INTRONS_TAF2dIDR in column GROUP
CR : having value CR in column GROUP
CS : having value CS in column GROUP
AS_NC : having value AS_NC in column GROUP
Intron duplicates removal: yes
Numbers of introns per group before / after neglecting introns which were not found in gene annotation (GTF file). For the comparisons only introns which were found in the gene annotation are used. These numbers might change slightly for each feature if NAs occur.
UP_INTRONS_TAF2: 120 / 107
DOWN_INTRONS_TAF2: 99 / 94
UP_INTRONS_TAF2dIDR: 96 / 89
DOWN_INTRONS_TAF2dIDR: 105 / 100
CR: 50 / 49
CS: 1000 / 966
AS_NC: 1000 / 949

# 5 Overview: Features with statistically significant differences (p-val $\leq 0.05$)

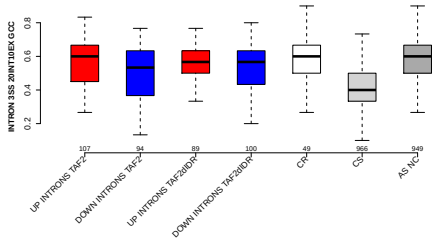
MEDIAN TR LENGTH



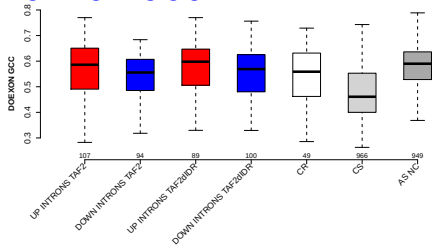

INTRON GCC



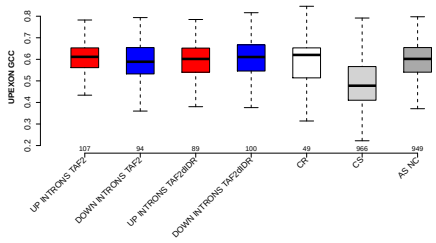

INTRON 3SS 20INT10EX GCC



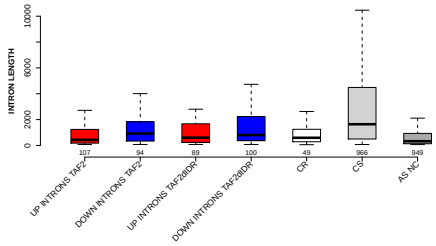

DOEXON GCC



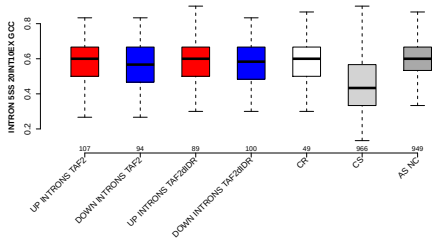
## UPEXON GCC



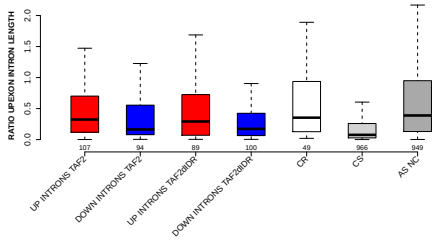

## INTRON LENGTH



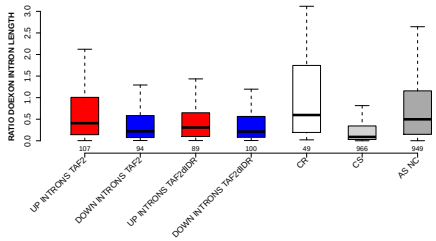

## INTRON 5SS 20INT10EX GCC



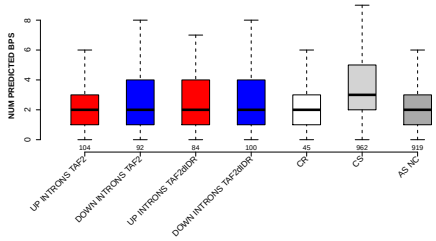

## RATIO UPEXON INTRON LENGTH



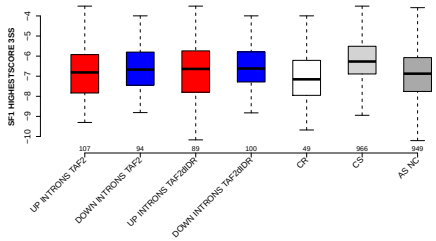
## RATIO DOEXON INTRON LENGTH



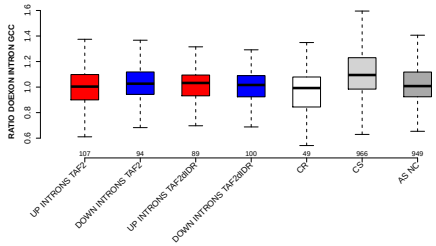

## NUM PREDICTED BPS



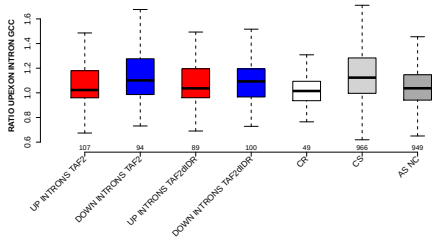

## SF1 HIGHESTSCORE 3SS



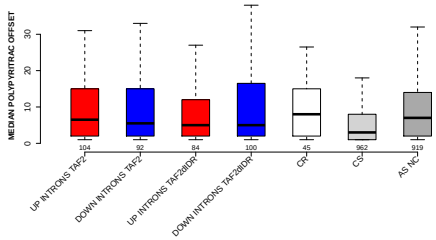

## RATIO DOEXON INTRON GCC



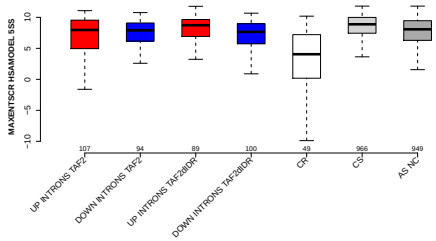
## RATIO UPEXON INTRON GCC



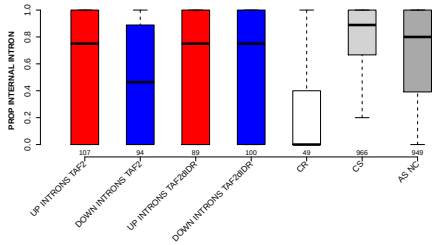

## MEDIAN POLYPYRITRAC OFFSET



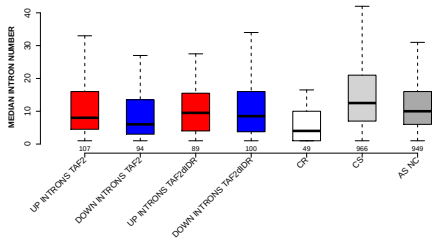

## MAXENTSCR HSAMODEL 5SS



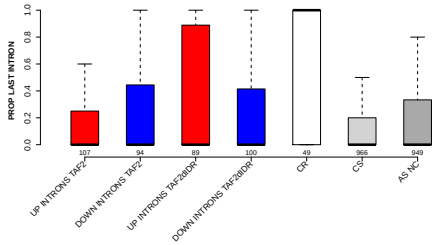

## PROP INTERNAL INTRON



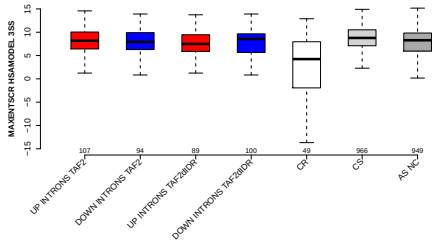
## MEDIAN INTRON NUMBER



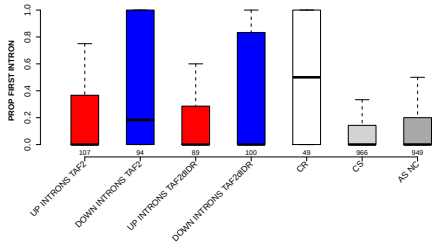

## PROP LAST INTRON



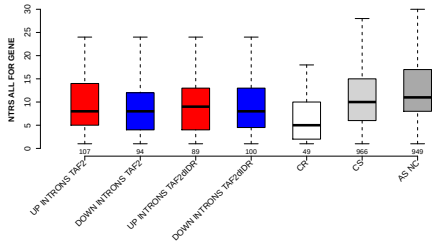

## MAXENTSCR HSAMODEL 3SS



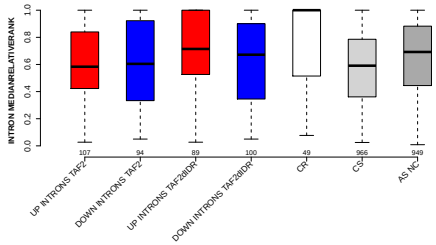

## PROP FIRST INTRON



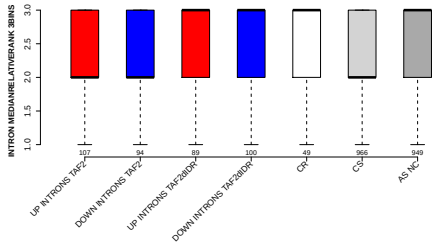
## NTRS ALL FOR GENE



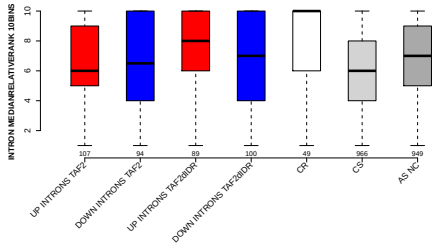

## INTRON MEDIANRELATIVERANK



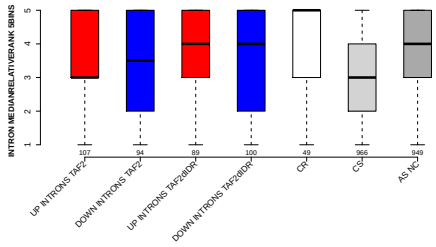

## INTRON MEDIANRELATIVERANK 3BINS



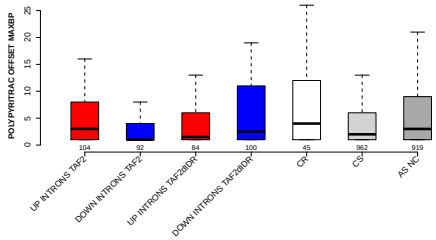

## INTRON MEDIANRELATIVERANK 10BINS



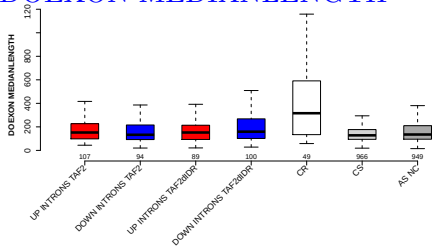
## INTRON MEDIANRELATIVERANK 5BINS



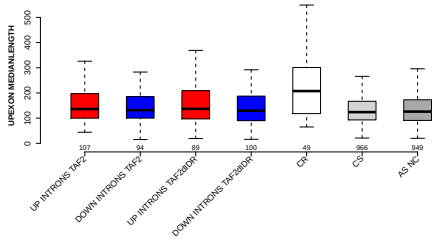

## POLYPYRITRAC OFFSET MAXBP



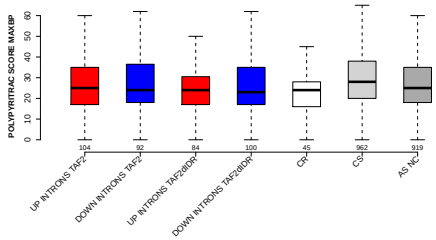

## DOEXON MEDIANLENGTH



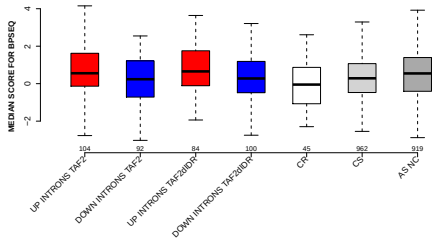

## UPEXON MEDIANLENGTH



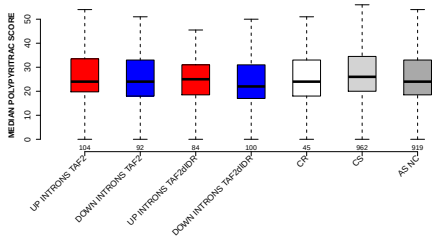
## POLYPYRITRAC SCORE MAXBP



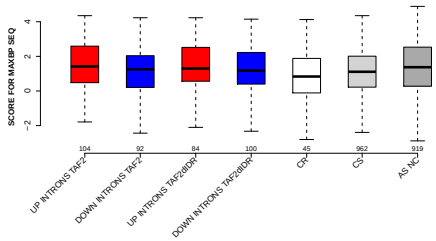

## MEDIAN SCORE FOR BPSEQ



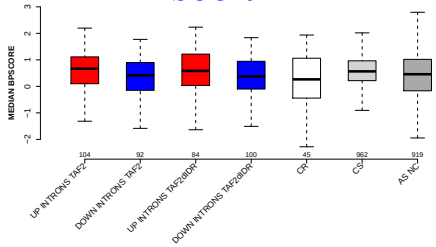

## MEDIAN POLYPYRITRAC SCORE



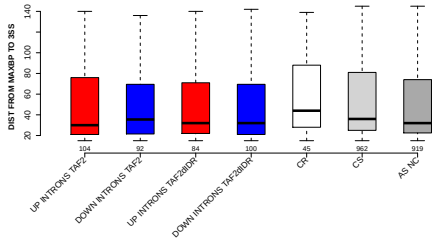

## SCORE FOR MAXBP SEQ



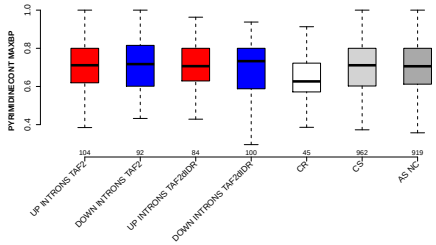
## MEDIAN BPSCORE



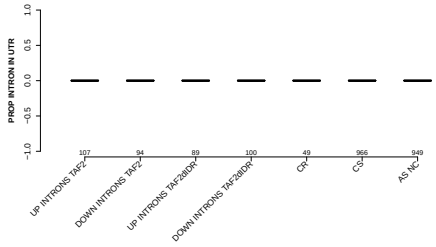

## DIST FROM MAXBP TO 3SS



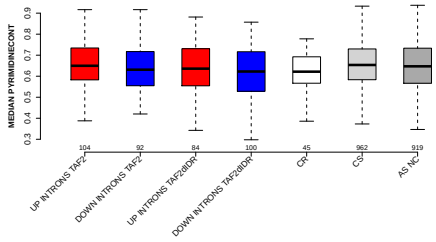

## PYRIMIDINECONT MAXBP



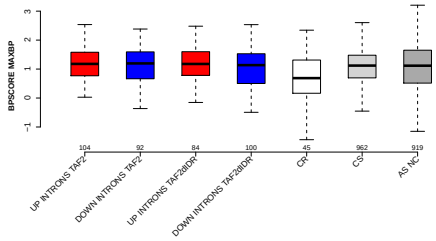

## PROP INTRON IN UTR



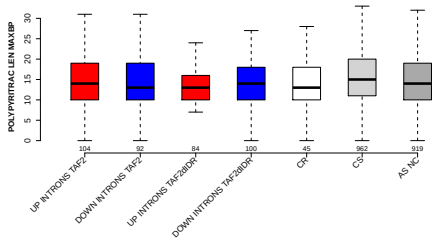
## MEDIAN PYRIMIDINECONT



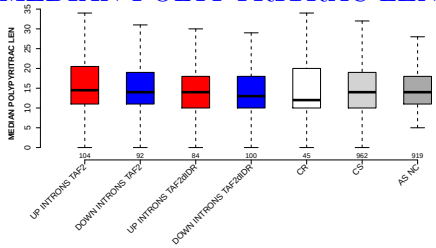

## BPSCORE MAXBP




## POLYPYRITRAC LEN MAXBP




## MEDIAN POLYPYRITRAC LEN



# 6 Details: Box plots and statistical assessments for all features

## 6.1 INTRON LENGTH

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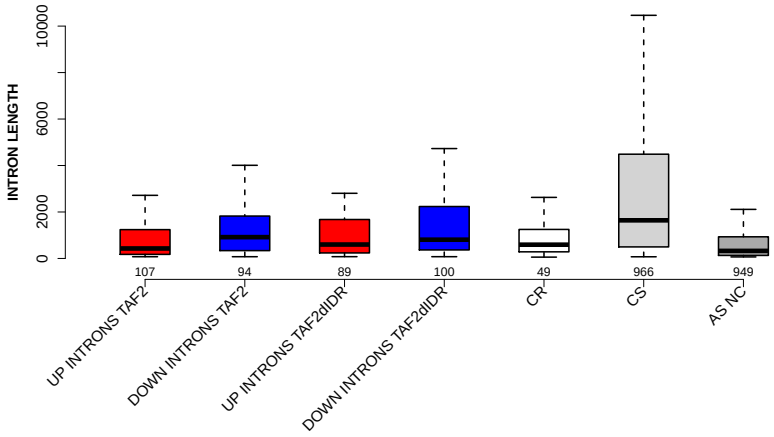
Meaning:




Significant results from Mann-Whitney U test:

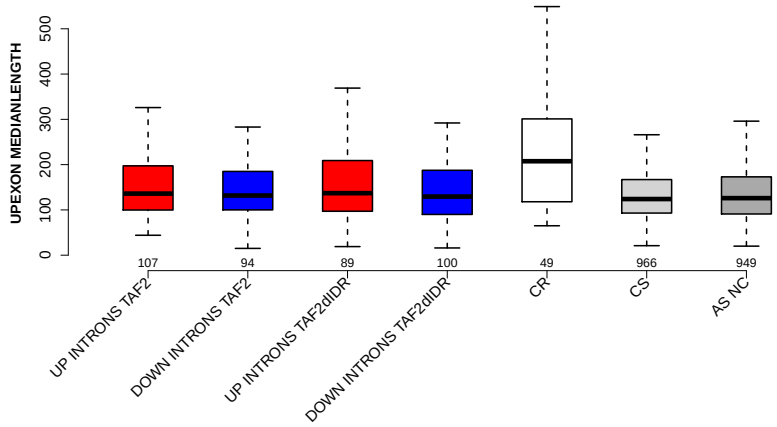
- `UP_INTRONS_TAF2` vs `DOWN_INTRONS_TAF2` : 0.0184638
  mean: 1939.486 > 1672.8085 , median: 430 < 917
- `UP_INTRONS_TAF2` vs `DOWN_INTRONS_TAF2dIDR` : 0.0089633
  mean: 1939.486 > 1728.36 , median: 430 < 807.5
- `UP_INTRONS_TAF2` vs `CS` : 8.3985e-11
  mean: 1939.486 < 5064.7308 , median: 430 < 1641
- `UP_INTRONS_TAF2` vs `AS_NC` : 0.0183574
  mean: 1939.486 > 888.0242 , median: 430 > 325
- `DOWN_INTRONS_TAF2` vs `CS` : 0.000101596
  mean: 1672.8085 < 5064.7308 , median: 917 < 1641
- `DOWN_INTRONS_TAF2` vs `AS_NC` : 9.36524e-08
  mean: 1672.8085 > 888.0242 , median: 917 > 325
- `UP_INTRONS_TAF2dIDR` vs `CS` : 9.08837e-07
  mean: 1898.1685 < 5064.7308 , median: 599 < 1641
- `UP_INTRONS_TAF2dIDR` vs `AS_NC` : 0.00048822
  mean: 1898.1685 > 888.0242 , median: 599 > 325

- DOWN_INTRONS_TAF2dIDR vs CS : 0.000147588
  mean: 1728.36 < 5064.7308 , median: 807.5 < 1641
- DOWN_INTRONS_TAF2dIDR vs AS_NC : 6.49998e-09
  mean: 1728.36 > 888.0242 , median: 807.5 > 325
- CR vs CS : 1.42888e-05
  mean: 1180.3673 < 5064.7308 , median: 592 < 1641
- CR vs AS_NC : 0.0129423
  mean: 1180.3673 > 888.0242 , median: 592 > 325
- CS vs AS_NC : 1.20013e-82
  mean: 5064.7308 > 888.0242 , median: 1641 > 325

## 6.2 UPEXON MEDIANLENGTH

Back to: Overview | ToC

Meaning: if intron is in several transcripts, it might have different up-stream exons, and this is the median length of them



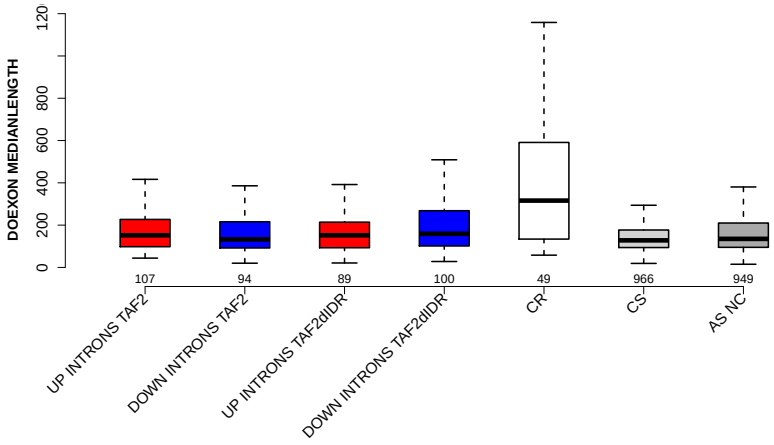

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CR` : 0.00206092
  mean: 190.285 < 382.9694 , median: 136 < 207.5
- `UP_INTRONS_TAF2` vs `CS` : 0.0291571
  mean: 190.285 > 143.0047 , median: 136 > 124
- `DOWN_INTRONS_TAF2` vs `CR` : 0.00104752
  mean: 181.2819 < 382.9694 , median: 131.75 < 207.5
- `UP_INTRONS_TAF2dIDR` vs `CR` : 0.0101179
  mean: 205.5843 < 382.9694 , median: 137 < 207.5
- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.00805679
  mean: 205.5843 > 143.0047 , median: 137 > 124
- `UP_INTRONS_TAF2dIDR` vs `AS_NC` : 0.0281292
  mean: 205.5843 > 163.4842 , median: 137 > 126
- `DOWN_INTRONS_TAF2dIDR` vs `CR` : 0.000354222
  mean: 193.87 < 382.9694 , median: 129.5 < 207.5
- `CR` vs `CS` : 1.08981e-07
  mean: 382.9694 > 143.0047 , median: 207.5 > 124
- `CR` vs `AS_NC` : 1.13843e-06
  mean: 382.9694 > 163.4842 , median: 207.5 > 126

## 6.3 DOEXON MEDIANLENGTH

Back to: Overview | ToC

Meaning: same as UPEXON MEDIANLENGTH but for down-stream exons




Significant results from Mann-Whitney U test:

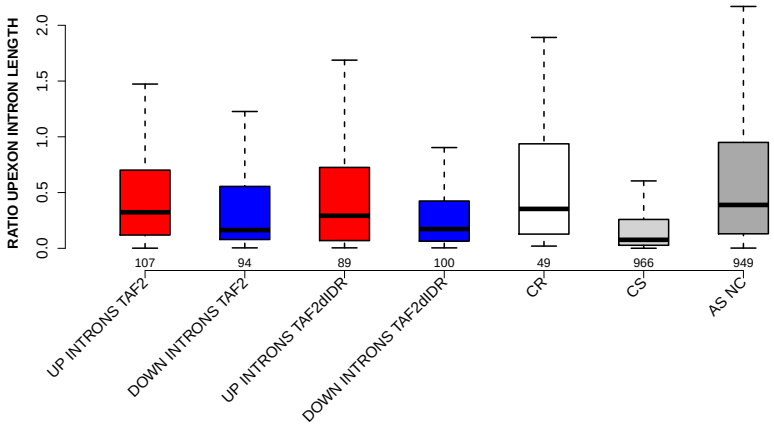
- `UP_INTRONS_TAF2` vs `CR` : 0.00108883
  mean: 347.1963 < 521.5306 , median: 152 < 316
- `UP_INTRONS_TAF2` vs `CS` : 0.00505644
  mean: 347.1963 > 257.1242 , median: 152 > 128
- `DOWN_INTRONS_TAF2` vs `CR` : 6.79037e-05
  mean: 238.484 < 521.5306 , median: 132.75 < 316
- `UP_INTRONS_TAF2dIDR` vs `CR` : 0.000541282
  mean: 308.2753 < 521.5306 , median: 152 < 316
- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.0364582
  mean: 308.2753 > 257.1242 , median: 152 > 128
- `DOWN_INTRONS_TAF2dIDR` vs `CR` : 0.00328645
  mean: 309.425 < 521.5306 , median: 159 < 316
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 0.00156852
  mean: 309.425 > 257.1242 , median: 159 > 128
- `DOWN_INTRONS_TAF2dIDR` vs `AS_NC` : 0.0424845
  mean: 309.425 > 263.8467 , median: 159 > 135
- `CR` vs `CS` : 6.08766e-08
  mean: 521.5306 > 257.1242 , median: 316 > 128
- `CR` vs `AS_NC` : 2.11858e-06
  mean: 521.5306 > 263.8467 , median: 316 > 135

- `CS` vs `AS_NC` : 0.0136925
  mean: 257.1242 < 263.8467 , median: 128 < 135

## 6.4 RATIO UPEXON INTRON LENGTH

Back to: Overview | ToC

Meaning: median up-stream exon length / intron length




Significant results from Mann-Whitney U test:

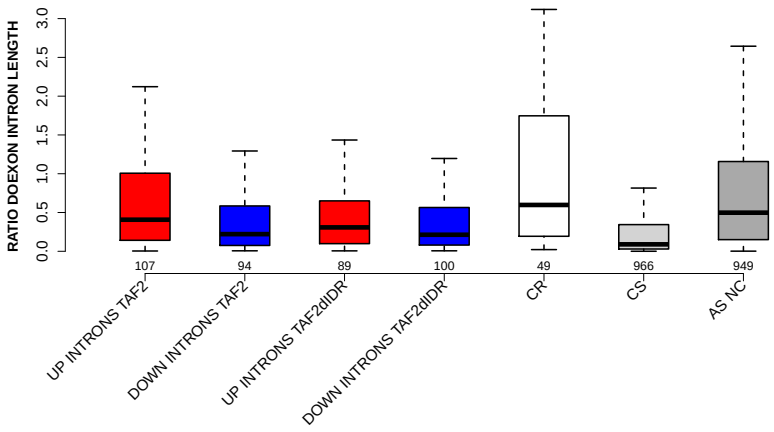
- UP_INTRONS_TAF2 vs DOWN_INTRONS_TAF2 : 0.0166178
  mean: 0.581333 > 0.435666 , median: 0.323276 > 0.163357
- UP_INTRONS_TAF2 vs DOWN_INTRONS_TAF2dIDR : 0.0043362
  mean: 0.581333 > 0.34257 , median: 0.323276 > 0.172691
- UP_INTRONS_TAF2 vs CS : 1.67322e-13
  mean: 0.581333 > 0.263246 , median: 0.323276 > 0.0762247
- DOWN_INTRONS_TAF2 vs CR : 0.00573334
  mean: 0.435666 < 1.2375 , median: 0.163357 < 0.35337
- DOWN_INTRONS_TAF2 vs CS : 6.89924e-06
  mean: 0.435666 > 0.263246 , median: 0.163357 > 0.0762247
- DOWN_INTRONS_TAF2 vs AS_NC : 3.28715e-05
  mean: 0.435666 < 0.688341 , median: 0.163357 < 0.388889
- UP_INTRONS_TAF2dIDR vs CS : 3.36709e-08
  mean: 0.674577 > 0.263246 , median: 0.291785 > 0.0762247
- UP_INTRONS_TAF2dIDR vs AS_NC : 0.023132
  mean: 0.674577 < 0.688341 , median: 0.291785 < 0.388889
- DOWN_INTRONS_TAF2dIDR vs CR : 0.00170376
  mean: 0.34257 < 1.2375 , median: 0.172691 < 0.35337
- DOWN_INTRONS_TAF2dIDR vs CS : 1.34936e-05
  mean: 0.34257 > 0.263246 , median: 0.172691 > 0.0762247

- DOWN_INTRONS_TAF2dIDR vs AS_NC : 9.01569e-07
  mean: 0.34257 < 0.688341 , median: 0.172691 < 0.388889
- CR vs CS : 5.66054e-10
  mean: 1.2375 > 0.263246 , median: 0.35337 > 0.0762247
- CS vs AS_NC : 1.89983e-80
  mean: 0.263246 < 0.688341 , median: 0.0762247 < 0.388889

## 6.5 RATIO DOEXON INTRON LENGTH

Back to: Overview | ToC

Meaning: median down-stream exon length / intron length




Significant results from Mann-Whitney U test:

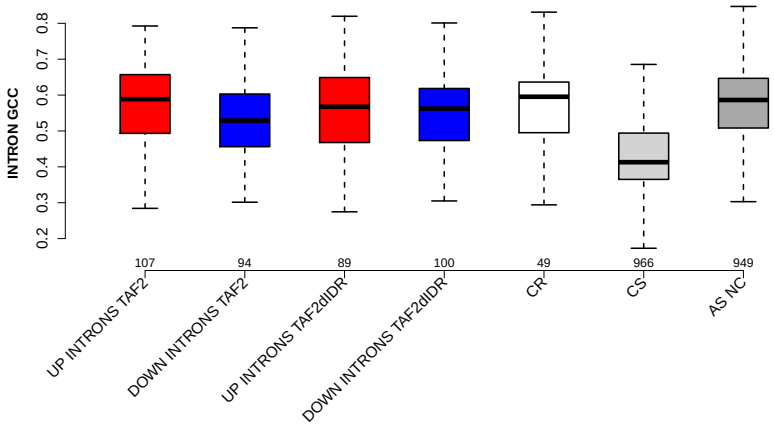
- UP_INTRONS_TAF2 vs DOWN_INTRONS_TAF2 : 0.00641893
  mean: 0.788857 > 0.525866 , median: 0.407115 > 0.221111
- UP_INTRONS_TAF2 vs DOWN_INTRONS_TAF2dIDR : 0.0121889
  mean: 0.788857 > 0.628273 , median: 0.407115 > 0.213347
- UP_INTRONS_TAF2 vs CS : 5.86374e-13
  mean: 0.788857 > 0.393069 , median: 0.407115 > 0.0895518
- DOWN_INTRONS_TAF2 vs CR : 0.000682717
  mean: 0.525866 < 1.4742 , median: 0.221111 < 0.597403
- DOWN_INTRONS_TAF2 vs CS : 7.08575e-05
  mean: 0.525866 > 0.393069 , median: 0.221111 > 0.0895518
- DOWN_INTRONS_TAF2 vs AS_NC : 4.27895e-06
  mean: 0.525866 < 1.0008 , median: 0.221111 < 0.497856
- UP_INTRONS_TAF2dIDR vs CR : 0.0227246
  mean: 0.853285 < 1.4742 , median: 0.308219 < 0.597403
- UP_INTRONS_TAF2dIDR vs CS : 1.53931e-07
  mean: 0.853285 > 0.393069 , median: 0.308219 > 0.0895518
- UP_INTRONS_TAF2dIDR vs AS_NC : 0.00578146
  mean: 0.853285 < 1.0008 , median: 0.308219 < 0.497856
- DOWN_INTRONS_TAF2dIDR vs CR : 0.000983805
  mean: 0.628273 < 1.4742 , median: 0.213347 < 0.597403

- DOWN_INTRONS_TAF2dIDR vs CS : 1.65042e-06
  mean: 0.628273 > 0.393069 , median: 0.213347 > 0.0895518
- DOWN_INTRONS_TAF2dIDR vs AS_NC : 9.22945e-06
  mean: 0.628273 < 1.0008 , median: 0.213347 < 0.497856
- CR vs CS : 7.84386e-11
  mean: 1.4742 > 0.393069 , median: 0.597403 > 0.0895518
- CS vs AS_NC : 1.75445e-76
  mean: 0.393069 < 1.0008 , median: 0.0895518 < 0.497856

## 6.6 INTRON GCC

Back to: Overview | ToC

Meaning: GC content of entire intron sequence



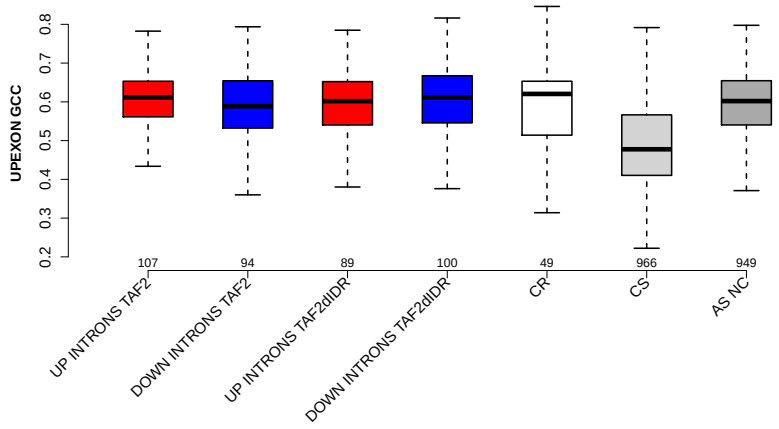

Significant results from Mann-Whitney U test:

- UP_INTRONS_TAF2 vs DOWN_INTRONS_TAF2 : 0.00851849
  mean: 0.568618 > 0.529553 , median: 0.588608 > 0.528957
- UP_INTRONS_TAF2 vs CS : 3.06111e-23
  mean: 0.568618 > 0.436335 , median: 0.588608 > 0.41294
- DOWN_INTRONS_TAF2 vs CR : 0.0479418
  mean: 0.529553 < 0.567094 , median: 0.528957 < 0.595349
- DOWN_INTRONS_TAF2 vs CS : 5.9512e-14
  mean: 0.529553 > 0.436335 , median: 0.528957 > 0.41294
- DOWN_INTRONS_TAF2 vs AS_NC : 0.000139585
  mean: 0.529553 < 0.573131 , median: 0.528957 < 0.586288
- UP_INTRONS_TAF2dIDR vs CS : 7.60208e-18
  mean: 0.558975 > 0.436335 , median: 0.567442 > 0.41294
- DOWN_INTRONS_TAF2dIDR vs CS : 2.50239e-21
  mean: 0.553399 > 0.436335 , median: 0.562386 > 0.41294
- DOWN_INTRONS_TAF2dIDR vs AS_NC : 0.0499544
  mean: 0.553399 < 0.573131 , median: 0.562386 < 0.586288
- CR vs CS : 8.34462e-12
  mean: 0.567094 > 0.436335 , median: 0.595349 > 0.41294
- CS vs AS_NC : 2.805e-125
  mean: 0.436335 < 0.573131 , median: 0.41294 < 0.586288

## 6.7 UPEXON GCC

Back to: Overview | ToC

Meaning: median GC content of up-stream exons for all occurrences of intron



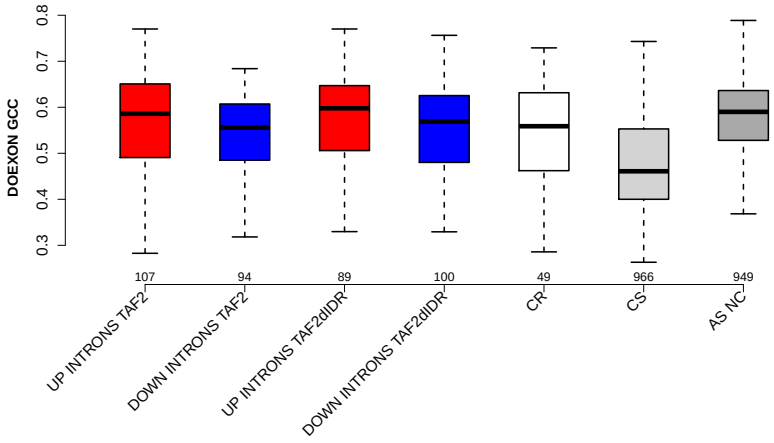

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CS` : 1.26297e-20
  mean: 0.5953 > 0.492495 , median: 0.611498 > 0.477628
- `DOWN_INTRONS_TAF2` vs `CS` : 3.26931e-16
  mean: 0.588378 > 0.492495 , median: 0.588738 > 0.477628
- `UP_INTRONS_TAF2dIDR` vs `CS` : 3.05794e-15
  mean: 0.589414 > 0.492495 , median: 0.60177 > 0.477628
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 2.9916e-19
  mean: 0.600642 > 0.492495 , median: 0.610776 > 0.477628
- `CR` vs `CS` : 2.06025e-07
  mean: 0.580403 > 0.492495 , median: 0.62042 > 0.477628
- `CS` vs `AS_NC` : 1.61282e-89
  mean: 0.492495 < 0.592162 , median: 0.477628 < 0.60197

## 6.8 DOEXON GCC

Back to: Overview | ToC

Meaning: same as UPEXON MEDIANGCC but for down-stream exons



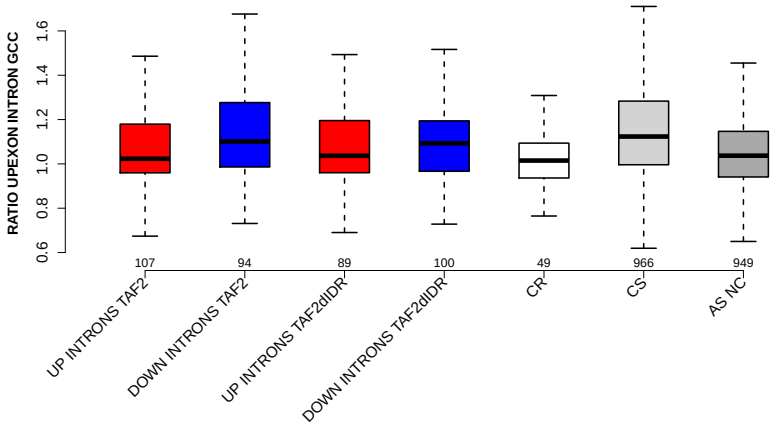

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CS` : 1.41494e-14
  mean: 0.564654 > 0.478673 , median: 0.585938 > 0.460893
- `DOWN_INTRONS_TAF2` vs `UP_INTRONS_TAF2dIDR` : 0.0263441
  mean: 0.541528 < 0.566604 , median: 0.555716 < 0.597826
- `DOWN_INTRONS_TAF2` vs `CS` : 2.07795e-09
  mean: 0.541528 > 0.478673 , median: 0.555716 > 0.460893
- `DOWN_INTRONS_TAF2` vs `AS_NC` : 0.000214565
  mean: 0.541528 < 0.578015 , median: 0.555716 < 0.59
- `UP_INTRONS_TAF2dIDR` vs `CS` : 1.74038e-13
  mean: 0.566604 > 0.478673 , median: 0.597826 > 0.460893
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 1.11293e-11
  mean: 0.553456 > 0.478673 , median: 0.569048 > 0.460893
- `DOWN_INTRONS_TAF2dIDR` vs `AS_NC` : 0.0169532
  mean: 0.553456 < 0.578015 , median: 0.569048 < 0.59
- `CR` vs `CS` : 0.000121241
  mean: 0.540458 > 0.478673 , median: 0.558824 > 0.460893
- `CR` vs `AS_NC` : 0.0376878
  mean: 0.540458 < 0.578015 , median: 0.558824 < 0.59
- `CS` vs `AS_NC` : 2.08968e-95
  mean: 0.478673 < 0.578015 , median: 0.460893 < 0.59

## 6.9 RATIO UPEXON INTRON GCC

Back to: Overview | ToC

Meaning: median GC content of up-stream exons / GC content of intron



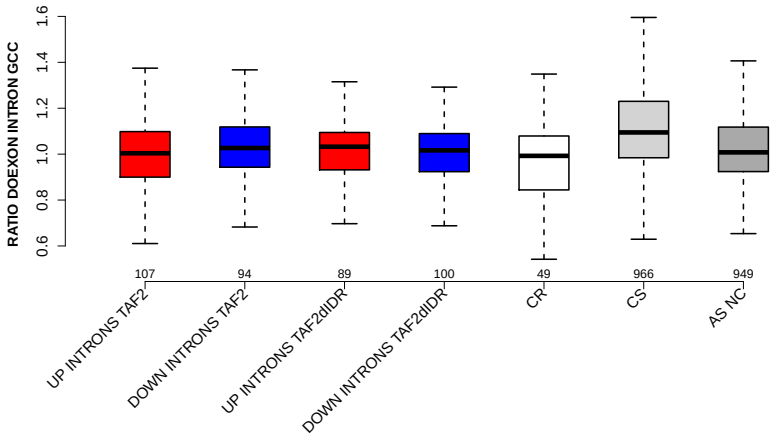

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `DOWN_INTRONS_TAF2` : 0.0237351
  mean: 1.0766 < 1.1429 , median: 1.023 < 1.1008
- `UP_INTRONS_TAF2` vs `CS` : 0.000232132
  mean: 1.0766 < 1.1559 , median: 1.023 < 1.1235
- `DOWN_INTRONS_TAF2` vs `CR` : 0.00830768
  mean: 1.1429 > 1.0397 , median: 1.1008 > 1.0149
- `DOWN_INTRONS_TAF2` vs `AS_NC` : 0.000365118
  mean: 1.1429 > 1.0541 , median: 1.1008 > 1.037
- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.00498581
  mean: 1.0817 < 1.1559 , median: 1.0365 < 1.1235
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 0.0417684
  mean: 1.1033 < 1.1559 , median: 1.0927 < 1.1235
- `DOWN_INTRONS_TAF2dIDR` vs `AS_NC` : 0.0143612
  mean: 1.1033 > 1.0541 , median: 1.0927 > 1.037
- `CR` vs `CS` : 0.000345774
  mean: 1.0397 < 1.1559 , median: 1.0149 < 1.1235
- `CS` vs `AS_NC` : 2.69574e-23
  mean: 1.1559 > 1.0541 , median: 1.1235 > 1.037

## 6.10 RATIO DOEXON INTRON GCC

Back to: Overview | ToC

Meaning: same as RATIO UPEXON INTRON GCC but for down-stream exons



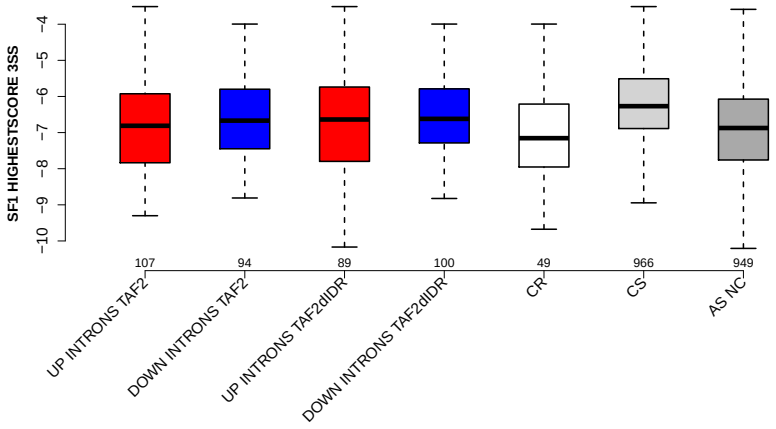

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CS` : 3.8257e-08
  mean: 1.0106 < 1.1219 , median: 1.0038 < 1.0946
- `DOWN_INTRONS_TAF2` vs `CS` : 6.15168e-05
  mean: 1.0432 < 1.1219 , median: 1.0266 < 1.0946
- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.000130287
  mean: 1.0379 < 1.1219 , median: 1.0323 < 1.0946
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 1.24437e-07
  mean: 1.0116 < 1.1219 , median: 1.0164 < 1.0946
- `CR` vs `CS` : 7.04813e-07
  mean: 0.969457 < 1.1219 , median: 0.992481 < 1.0946
- `CS` vs `AS_NC` : 8.35131e-28
  mean: 1.1219 > 1.0283 , median: 1.0946 > 1.0078

## 6.11 SF1 HIGHESTSCORE 3SS

Back to: Overview | ToC

Meaning: highest score of a SF1 positon weight matrix trained with human data in the last 150 nt 3 prime intron positons



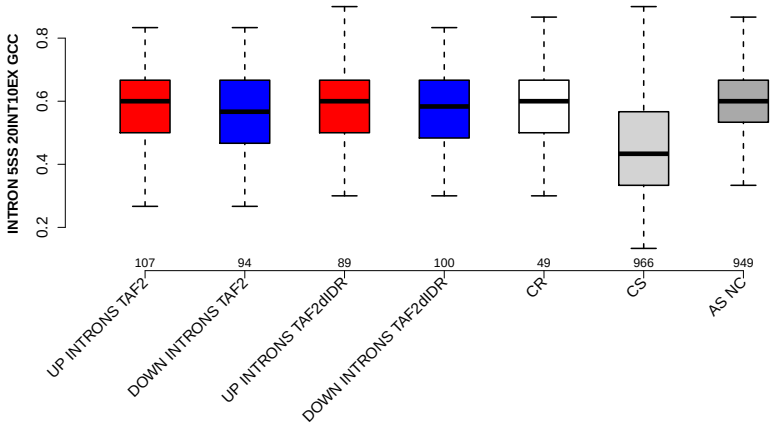

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CS` : 6.68522e-06
  mean: -6.7321 < -6.19464 , median: -6.81202 < -6.26872
- `DOWN_INTRONS_TAF2` vs `CR` : 0.0325605
  mean: -6.5751 > -7.07336 , median: -6.66903 > -7.15474
- `DOWN_INTRONS_TAF2` vs `CS` : 0.00127012
  mean: -6.5751 < -6.19464 , median: -6.66903 < -6.26872
- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.00041971
  mean: -6.72458 < -6.19464 , median: -6.6381 < -6.26872
- `DOWN_INTRONS_TAF2dIDR` vs `CR` : 0.0126623
  mean: -6.54342 > -7.07336 , median: -6.62001 > -7.15474
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 0.00198725
  mean: -6.54342 < -6.19464 , median: -6.62001 < -6.26872
- `DOWN_INTRONS_TAF2dIDR` vs `AS_NC` : 0.0155696
  mean: -6.54342 > -6.83588 , median: -6.62001 > -6.8734
- `CR` vs `CS` : 1.95145e-06
  mean: -7.07336 < -6.19464 , median: -7.15474 < -6.26872
- `CS` vs `AS_NC` : 6.28079e-34
  mean: -6.19464 > -6.83588 , median: -6.26872 > -6.8734

## 6.12 INTRON 5SS 20INT10EX GCC

Back to: Overview | ToC

Meaning: GC content of last 10 exon and first 20 intron positions at 5 prime end of intron



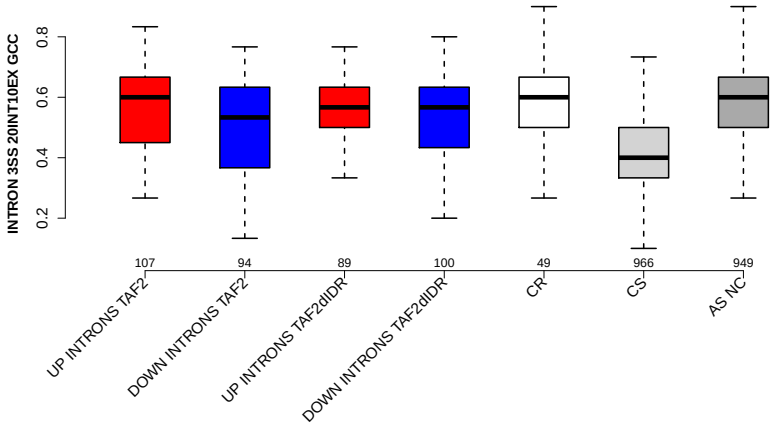

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CS` : 1.14467e-13
  mean: 0.575701 > 0.461939 , median: 0.6 > 0.433333
- `DOWN_INTRONS_TAF2` vs `CS` : 5.24444e-10
  mean: 0.563475 > 0.461939 , median: 0.566667 > 0.433333
- `DOWN_INTRONS_TAF2` vs `AS_NC` : 0.0231283
  mean: 0.563475 < 0.594766 , median: 0.566667 < 0.6
- `UP_INTRONS_TAF2dIDR` vs `CS` : 8.91158e-13
  mean: 0.583146 > 0.461939 , median: 0.6 > 0.433333
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 2.9592e-14
  mean: 0.579667 > 0.461939 , median: 0.583333 > 0.433333
- `CR` vs `CS` : 2.47e-07
  mean: 0.57551 > 0.461939 , median: 0.6 > 0.433333
- `CS` vs `AS_NC` : 6.04821e-82
  mean: 0.461939 < 0.594766 , median: 0.433333 < 0.6

## 6.13 INTRON 3SS 20INT10EX GCC

Back to: Overview | ToC

Meaning: GC content of last 20 intron and first 10 exon positions at 3 prime end of intron




Significant results from Mann-Whitney U test:

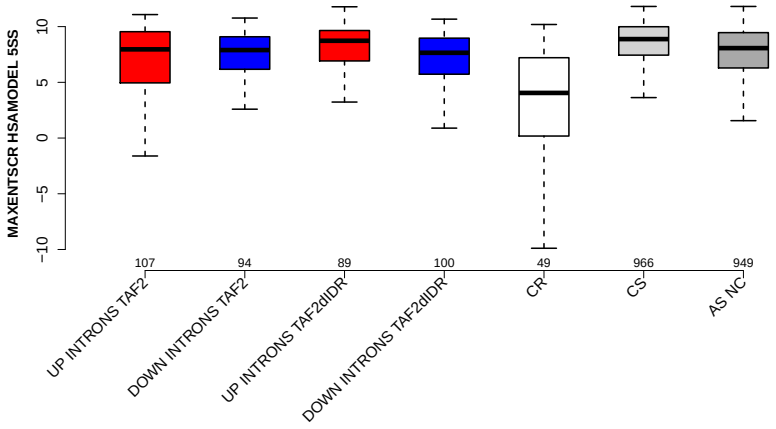
- `UP_INTRONS_TAF2` vs `DOWN_INTRONS_TAF2` : 0.000885121
  mean: 0.568536 > 0.497872 , median: 0.6 > 0.533333
- `UP_INTRONS_TAF2` vs `DOWN_INTRONS_TAF2dIDR` : 0.0484363
  mean: 0.568536 > 0.533333 , median: 0.6 > 0.566667
- `UP_INTRONS_TAF2` vs `CS` : 3.91953e-20
  mean: 0.568536 > 0.418288 , median: 0.6 > 0.4
- `DOWN_INTRONS_TAF2` vs `UP_INTRONS_TAF2dIDR` : 0.0226531
  mean: 0.497872 < 0.550562 , median: 0.533333 < 0.566667
- `DOWN_INTRONS_TAF2` vs `CR` : 0.0174201
  mean: 0.497872 < 0.565306 , median: 0.533333 < 0.6
- `DOWN_INTRONS_TAF2` vs `CS` : 1.49894e-07
  mean: 0.497872 > 0.418288 , median: 0.533333 > 0.4
- `DOWN_INTRONS_TAF2` vs `AS_NC` : 1.26084e-05
  mean: 0.497872 < 0.568599 , median: 0.533333 < 0.6
- `UP_INTRONS_TAF2dIDR` vs `CS` : 1.9235e-16
  mean: 0.550562 > 0.418288 , median: 0.566667 > 0.4
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 2.58003e-14
  mean: 0.533333 > 0.418288 , median: 0.566667 > 0.4

- DOWN_INTRONS_TAF2dIDR vs AS_NC : 0.0104434
  mean: 0.533333 < 0.568599 , median: 0.566667 < 0.6
- CR vs CS : 1.72611e-10
  mean: 0.565306 > 0.418288 , median: 0.6 > 0.4
- CS vs AS_NC : 2.19029e-111
  mean: 0.418288 < 0.568599 , median: 0.4 < 0.6

## 6.14 MAXENTSCR HSAMODEL 5SS

Back to: Overview | ToC

Meaning: maximum entropy score of 5ss using a model trained with human splice sites




Significant results from Mann-Whitney U test:

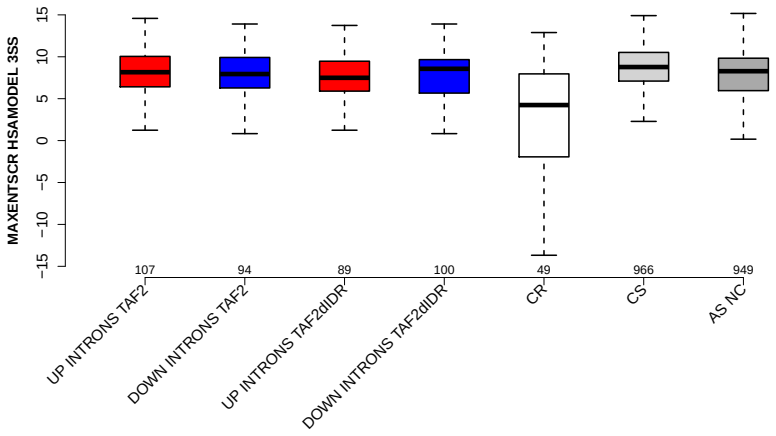
- `UP_INTRONS_TAF2` vs `UP_INTRONS_TAF2dIDR` : 0.0307751
  mean: 7.2515 < 8.0161 , median: 7.96 < 8.73
- `UP_INTRONS_TAF2` vs `CR` : 1.85021e-07
  mean: 7.2515 > 2.4767 , median: 7.96 > 4.05
- `UP_INTRONS_TAF2` vs `CS` : 6.24525e-06
  mean: 7.2515 < 8.4679 , median: 7.96 < 8.88
- `DOWN_INTRONS_TAF2` vs `UP_INTRONS_TAF2dIDR` : 0.0145034
  mean: 7.2206 < 8.0161 , median: 7.895 < 8.73
- `DOWN_INTRONS_TAF2` vs `CR` : 2.25843e-07
  mean: 7.2206 > 2.4767 , median: 7.895 > 4.05
- `DOWN_INTRONS_TAF2` vs `CS` : 1.60443e-06
  mean: 7.2206 < 8.4679 , median: 7.895 < 8.88
- `UP_INTRONS_TAF2dIDR` vs `DOWN_INTRONS_TAF2dIDR` : 0.00245377
  mean: 8.0161 > 6.8956 , median: 8.73 > 7.65
- `UP_INTRONS_TAF2dIDR` vs `CR` : 1.92598e-10
  mean: 8.0161 > 2.4767 , median: 8.73 > 4.05
- `UP_INTRONS_TAF2dIDR` vs `AS_NC` : 0.0260367
  mean: 8.0161 > 7.2152 , median: 8.73 > 8.07
- `DOWN_INTRONS_TAF2dIDR` vs `CR` : 1.13283e-06
  mean: 6.8956 > 2.4767 , median: 7.65 > 4.05

- DOWN_INTRONS_TAF2dIDR vs CS : 1.30147e-08
  mean: 6.8956 < 8.4679 , median: 7.65 < 8.88
- CR vs CS : 2.20109e-17
  mean: 2.4767 < 8.4679 , median: 4.05 < 8.88
- CR vs AS_NC : 1.19476e-10
  mean: 2.4767 < 7.2152 , median: 4.05 < 8.07
- CS vs AS_NC : 3.26574e-18
  mean: 8.4679 > 7.2152 , median: 8.88 > 8.07

## 6.15 MAXENTSCR HSAMODEL 3SS

Back to: Overview | ToC

Meaning: maximum entropy score of 3ss using a model trained with human splice sites




Significant results from Mann-Whitney U test:

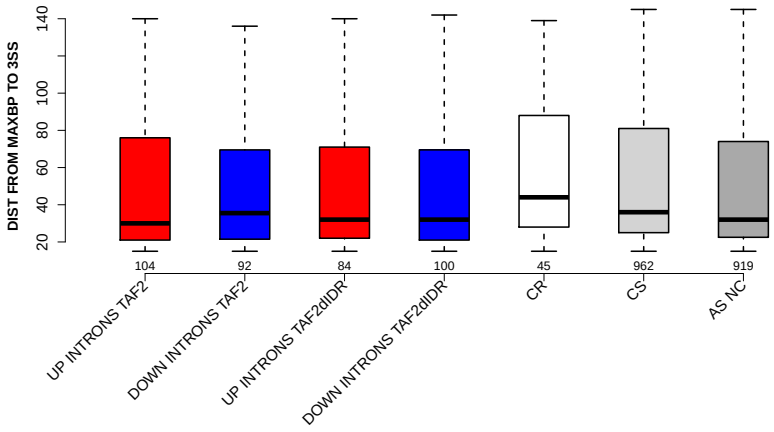
- `UP_INTRONS_TAF2` vs `CR` : 1.00302e-06
  mean: 7.8701 > 1.2061 , median: 8.16 > 4.24
- `UP_INTRONS_TAF2` vs `CS` : 0.0133576
  mean: 7.8701 < 8.6681 , median: 8.16 < 8.775
- `DOWN_INTRONS_TAF2` vs `CR` : 5.95799e-06
  mean: 7.6812 > 1.2061 , median: 7.94 > 4.24
- `DOWN_INTRONS_TAF2` vs `CS` : 0.0073173
  mean: 7.6812 < 8.6681 , median: 7.94 < 8.775
- `UP_INTRONS_TAF2dIDR` vs `CR` : 4.6343e-05
  mean: 7.2569 > 1.2061 , median: 7.49 > 4.24
- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.00089832
  mean: 7.2569 < 8.6681 , median: 7.49 < 8.775
- `DOWN_INTRONS_TAF2dIDR` vs `CR` : 8.24022e-06
  mean: 7.55 > 1.2061 , median: 8.565 > 4.24
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 0.0060663
  mean: 7.55 < 8.6681 , median: 8.565 < 8.775
- `CR` vs `CS` : 7.80899e-12
  mean: 1.2061 < 8.6681 , median: 4.24 < 8.775
- `CR` vs `AS_NC` : 3.03037e-08
  mean: 1.2061 < 7.6425 , median: 4.24 < 8.28

- `CS` vs `AS_NC` : 1.42038e-09
  mean: 8.6681 > 7.6425 , median: 8.775 > 8.28

## 6.16 DIST FROM MAXBP TO 3SS

Back to: Overview | ToC

Meaning: Distance to 3ss of best precited BP



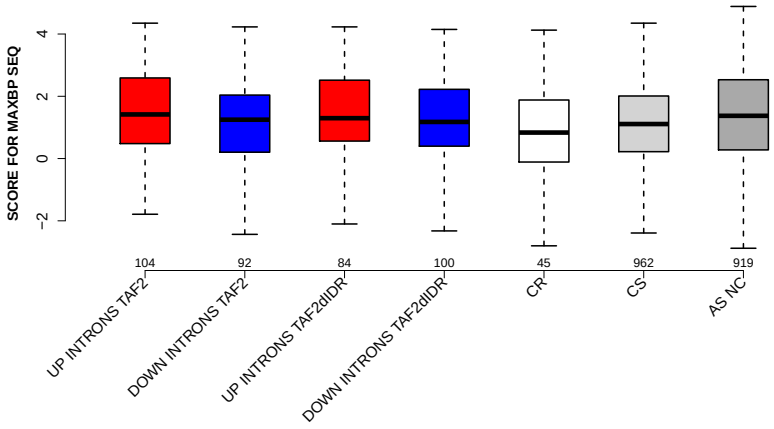

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CR` : 0.0318395
  mean: 51.3077 < 60.6889 , median: 30 < 44
- `UP_INTRONS_TAF2dIDR` vs `CR` : 0.0248237
  mean: 48.4762 < 60.6889 , median: 32 < 44
- `DOWN_INTRONS_TAF2dIDR` vs `CR` : 0.0420781
  mean: 50.81 < 60.6889 , median: 32 < 44
- `CR` vs `AS_NC` : 0.0172338
  mean: 60.6889 > 50.5473 , median: 44 > 32
- `CS` vs `AS_NC` : 0.000701499
  mean: 54.1944 > 50.5473 , median: 36 > 32

## 6.17 SCORE FOR MAXBP SEQ

Back to: Overview | ToC

Meaning: BP sequence score of best predicted BP



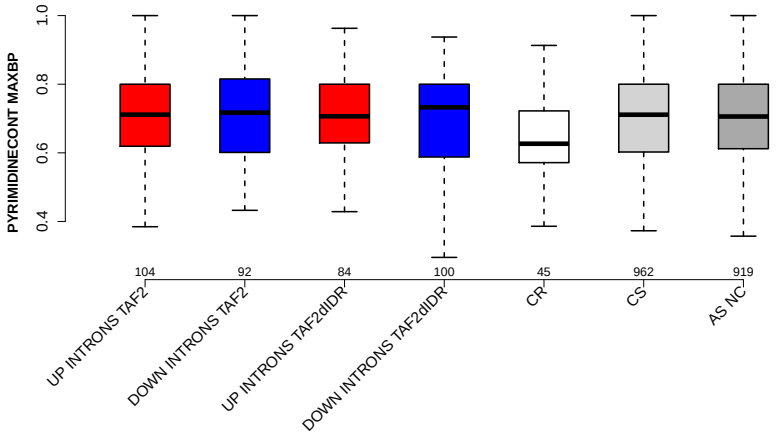

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CR` : 0.00780121
  mean: 1.5056 > 0.727067 , median: 1.4172 > 0.834817
- `UP_INTRONS_TAF2` vs `CS` : 0.0161378
  mean: 1.5056 > 1.114 , median: 1.4172 > 1.1088
- `UP_INTRONS_TAF2dIDR` vs `CR` : 0.0114016
  mean: 1.4578 > 0.727067 , median: 1.2964 > 0.834817
- `DOWN_INTRONS_TAF2dIDR` vs `CR` : 0.0408561
  mean: 1.2454 > 0.727067 , median: 1.1766 > 0.834817
- `CR` vs `AS_NC` : 0.00895556
  mean: 0.727067 < 1.3493 , median: 0.834817 < 1.3728
- `CS` vs `AS_NC` : 0.000284643
  mean: 1.114 < 1.3493 , median: 1.1088 < 1.3728

## 6.18 PYRIMIDINECONT MAXBP

Back to: Overview | ToC

Meaning: Pyrimidine content between the BP adenine and the 3 prime splice site for best BP



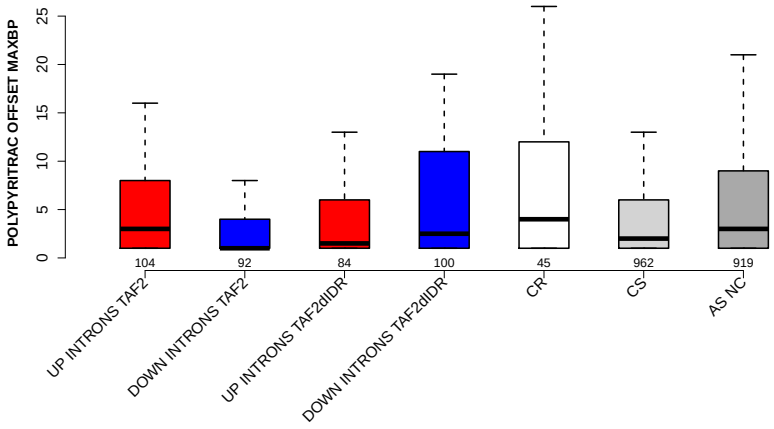

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CR` : 0.00310845
  mean: 0.709879 > 0.640034 , median: 0.711195 > 0.626506
- `DOWN_INTRONS_TAF2` vs `CR` : 0.011935
  mean: 0.704664 > 0.640034 , median: 0.717143 > 0.626506
- `UP_INTRONS_TAF2dIDR` vs `CR` : 0.00666117
  mean: 0.704591 > 0.640034 , median: 0.706389 > 0.626506
- `DOWN_INTRONS_TAF2dIDR` vs `CR` : 0.0192715
  mean: 0.689789 > 0.640034 , median: 0.732684 > 0.626506
- `CR` vs `CS` : 0.00178398
  mean: 0.640034 < 0.706294 , median: 0.626506 < 0.711111
- `CR` vs `AS_NC` : 0.00255973
  mean: 0.640034 < 0.702141 , median: 0.626506 < 0.705882

## 6.19 POLYPYRITRAC OFFSET MAXBP

Back to: Overview | ToC

Meaning: Polypyrimidine track offset relative to the BP adenine for best BP



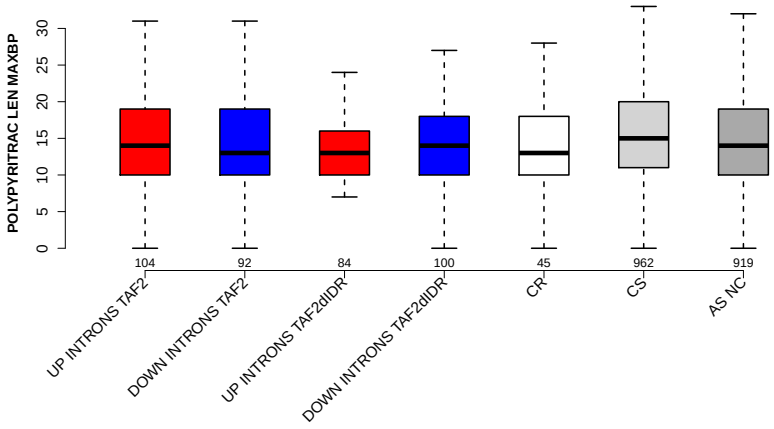

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `DOWN_INTRONS_TAF2` : 0.0162287
  mean: 7.0673 > 5.913 , median: 3 > 1
- `UP_INTRONS_TAF2` vs `CS` : 0.0167756
  mean: 7.0673 > 4.0541 , median: 3 > 2
- `DOWN_INTRONS_TAF2` vs `DOWN_INTRONS_TAF2dIDR` : 0.0291507
  mean: 5.913 < 9.82 , median: 1 < 2.5
- `DOWN_INTRONS_TAF2` vs `CR` : 0.00200017
  mean: 5.913 < 8.0667 , median: 1 < 4
- `DOWN_INTRONS_TAF2` vs `AS_NC` : 0.00124204
  mean: 5.913 < 6.445 , median: 1 < 3
- `UP_INTRONS_TAF2dIDR` vs `CR` : 0.0202325
  mean: 4.7262 < 8.0667 , median: 1.5 < 4
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 0.0232675
  mean: 9.82 > 4.0541 , median: 2.5 > 2
- `CR` vs `CS` : 0.0013561
  mean: 8.0667 > 4.0541 , median: 4 > 2
- `CS` vs `AS_NC` : 7.96057e-09
  mean: 4.0541 < 6.445 , median: 2 < 3

## 6.20 POLYPYRITRAC LEN MAXBP

Back to: Overview | ToC

Meaning: Polypyrimidine track length for best BP



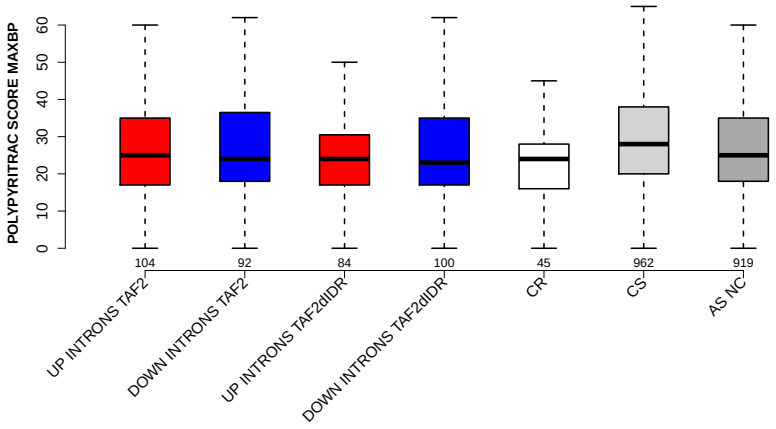

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.0113608
  mean: 14.2619 < 16.2536 , median: 13 < 15

## 6.21 POLYPYRITRAC SCORE MAXBP

Back to: Overview | ToC

Meaning: Polypyrimidine track score for best BP



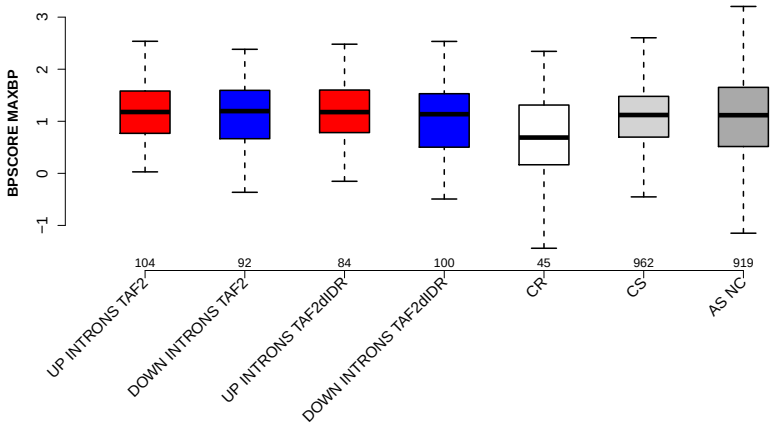

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CS` : 0.0355092
  mean: 27.0962 < 31.1403 , median: 25 < 28
- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.00107304
  mean: 26.6786 < 31.1403 , median: 24 < 28
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 0.00185925
  mean: 26.8 < 31.1403 , median: 23 < 28
- `CR` vs `CS` : 0.00935101
  mean: 28.0222 < 31.1403 , median: 24 < 28
- `CS` vs `AS_NC` : 4.43541e-06
  mean: 31.1403 > 28.2111 , median: 28 > 25

## 6.22 BPSCORE MAXBP

Back to: Overview | ToC

Meaning: SVM classification score of best BP



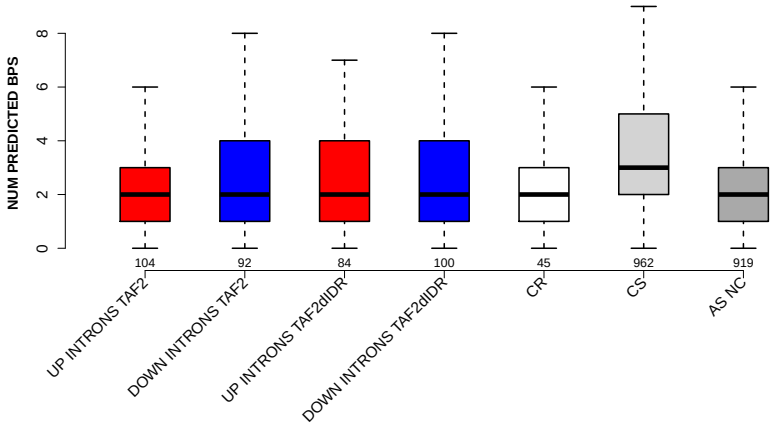

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CR` : 0.0131889
  mean: 1.0256 > 0.643616 , median: 1.178 > 0.687251
- `DOWN_INTRONS_TAF2` vs `CR` : 0.0144838
  mean: 0.930115 > 0.643616 , median: 1.1952 > 0.687251
- `UP_INTRONS_TAF2dIDR` vs `CR` : 0.00552453
  mean: 1.1495 > 0.643616 , median: 1.1762 > 0.687251
- `CR` vs `CS` : 0.00395986
  mean: 0.643616 < 1.0995 , median: 0.687251 < 1.1203
- `CR` vs `AS_NC` : 0.0159753
  mean: 0.643616 < 1.0117 , median: 0.687251 < 1.1169

## 6.23 NUM PREDICTED BPS

Back to: Overview | ToC

Meaning: number of all predicted BPs which have a positive BP score



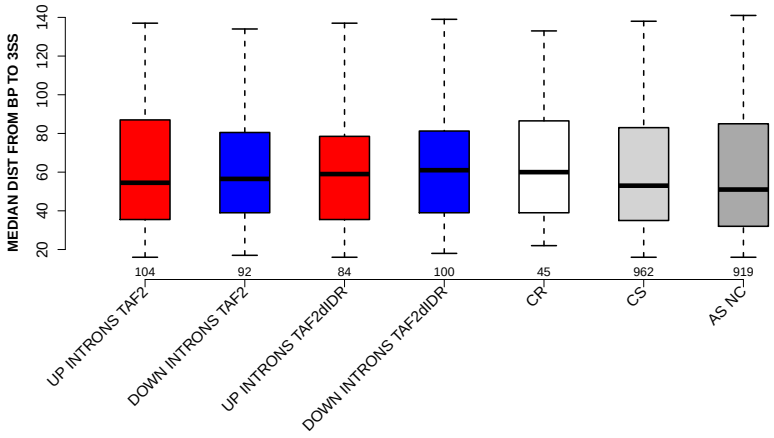

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CS` : 1.11953e-06
  mean: 2.5096 < 3.4283 , median: 2 < 3
- `UP_INTRONS_TAF2` vs `AS_NC` : 0.0339819
  mean: 2.5096 > 2.1132 , median: 2 = 2
- `DOWN_INTRONS_TAF2` vs `CS` : 2.39544e-05
  mean: 2.5761 < 3.4283 , median: 2 < 3
- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.00223987
  mean: 2.7619 < 3.4283 , median: 2 < 3
- `UP_INTRONS_TAF2dIDR` vs `AS_NC` : 0.00299055
  mean: 2.7619 > 2.1132 , median: 2 = 2
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 6.67877e-05
  mean: 2.57 < 3.4283 , median: 2 < 3
- `DOWN_INTRONS_TAF2dIDR` vs `AS_NC` : 0.013405
  mean: 2.57 > 2.1132 , median: 2 = 2
- `CR` vs `CS` : 0.000223094
  mean: 2.4 < 3.4283 , median: 2 < 3
- `CS` vs `AS_NC` : 4.30433e-50
  mean: 3.4283 > 2.1132 , median: 3 > 2

## 6.24 MEDIAN DIST FROM BP TO 3SS

Back to: Overview | ToC

Meaning: like DIST FROM MAXBP TO 3SS but median over top-3 predicted BPs



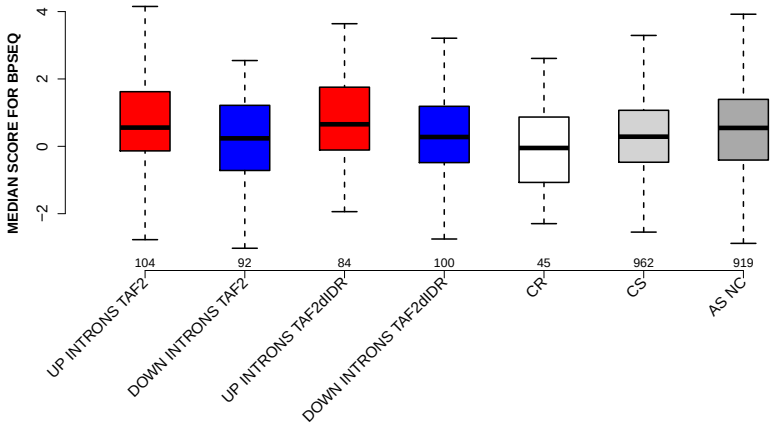

Significant results from Mann-Whitney U test:

- none

## 6.25 MEDIAN SCORE FOR BPSEQ

Back to: Overview | ToC

Meaning: like SCORE FOR MAXBP SEQ but median over top-3 predicted BPs



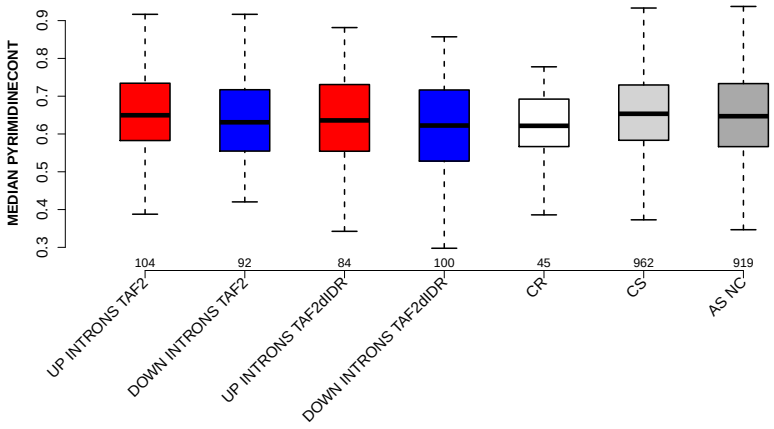

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `DOWN_INTRONS_TAF2` : 0.0309811
  mean: 0.687826 > 0.174783 , median: 0.555944 > 0.236987
- `UP_INTRONS_TAF2` vs `DOWN_INTRONS_TAF2dIDR` : 0.0464067
  mean: 0.687826 > 0.30313 , median: 0.555944 > 0.27667
- `UP_INTRONS_TAF2` vs `CR` : 0.00724519
  mean: 0.687826 > 0.0265635 , median: 0.555944 > -0.0489897
- `UP_INTRONS_TAF2` vs `CS` : 0.00280971
  mean: 0.687826 > 0.29138 , median: 0.555944 > 0.286001
- `DOWN_INTRONS_TAF2` vs `UP_INTRONS_TAF2dIDR` : 0.0121674
  mean: 0.174783 < 0.767415 , median: 0.236987 < 0.654206
- `UP_INTRONS_TAF2dIDR` vs `DOWN_INTRONS_TAF2dIDR` : 0.0218737
  mean: 0.767415 > 0.30313 , median: 0.654206 > 0.27667
- `UP_INTRONS_TAF2dIDR` vs `CR` : 0.00239222
  mean: 0.767415 > 0.0265635 , median: 0.654206 > -0.0489897
- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.000760755
  mean: 0.767415 > 0.29138 , median: 0.654206 > 0.286001
- `CR` vs `AS_NC` : 0.00855432
  mean: 0.0265635 < 0.55621 , median: -0.0489897 < 0.546263
- `CS` vs `AS_NC` : 4.30369e-05
  mean: 0.29138 < 0.55621 , median: 0.286001 < 0.546263

## 6.26 MEDIAN PYRIMIDINECONT

Back to: Overview | ToC

Meaning: like PYRIMIDINECONT MAXBP but median over top-3 predicted BPs



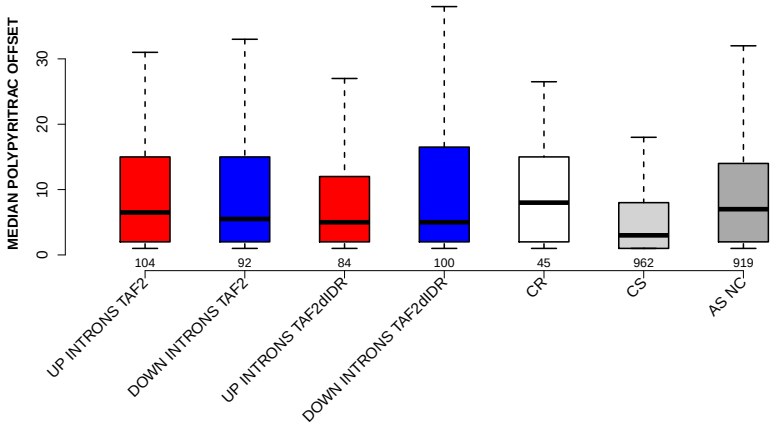

Significant results from Mann-Whitney U test:

- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 0.00310937
  mean: 0.620797 < 0.658743 , median: 0.622359 < 0.653454
- `DOWN_INTRONS_TAF2dIDR` vs `AS_NC` : 0.0287507
  mean: 0.620797 < 0.64973 , median: 0.622359 < 0.647059
- `CR` vs `CS` : 0.0119525
  mean: 0.608188 < 0.658743 , median: 0.621622 < 0.653454
- `CR` vs `AS_NC` : 0.0432779
  mean: 0.608188 < 0.64973 , median: 0.621622 < 0.647059

## 6.27 MEDIAN POLYPYRITRAC OFFSET

Back to: Overview | ToC

Meaning: like POLYPYRITRAC OFFSET MAXBP but median over top-3 predicted BPs



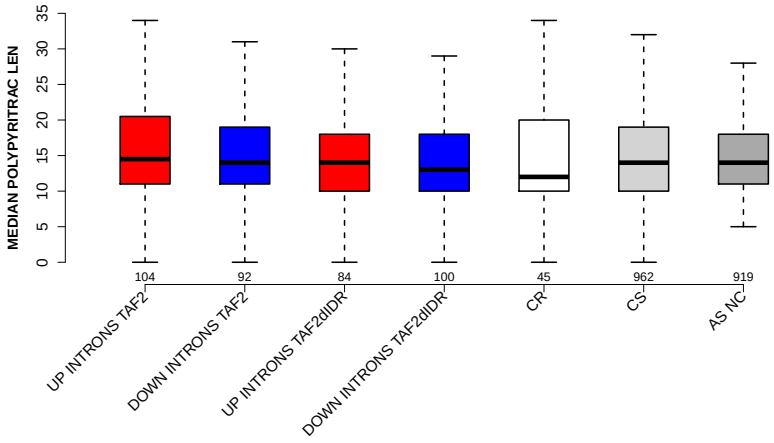

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CS` : 3.9985e-05
  mean: 12.601 > 6.2386 , median: 6.5 > 3
- `DOWN_INTRONS_TAF2` vs `CS` : 0.00665537
  mean: 12 > 6.2386 , median: 5.5 > 3
- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.0134334
  mean: 10.506 > 6.2386 , median: 5 > 3
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 0.000648067
  mean: 14.315 > 6.2386 , median: 5 > 3
- `CR` vs `CS` : 0.0002235
  mean: 11.7667 > 6.2386 , median: 8 > 3
- `CS` vs `AS_NC` : 1.08241e-22
  mean: 6.2386 < 11.7198 , median: 3 < 7

## 6.28 MEDIAN POLYPYRITRAC LEN

Back to: Overview | ToC

Meaning: like POLYPYRITRAC LEN MAXBP but median over top-3 predicted BPs



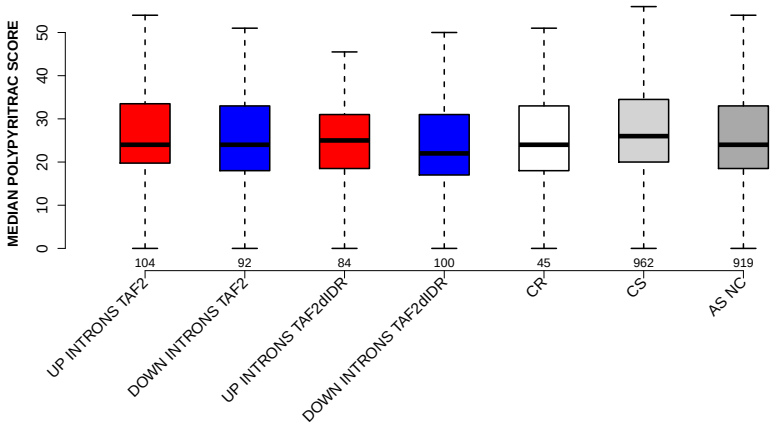

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `DOWN_INTRONS_TAF2dIDR` : 0.046529
  mean: 16.0337 > 14.09 , median: 14.5 > 13

## 6.29 MEDIAN POLYPYRITRAC SCORE

Back to: Overview | ToC

Meaning: like POLYPYRITRAC SCORE MAXBP but median over top-3 predicted BPs



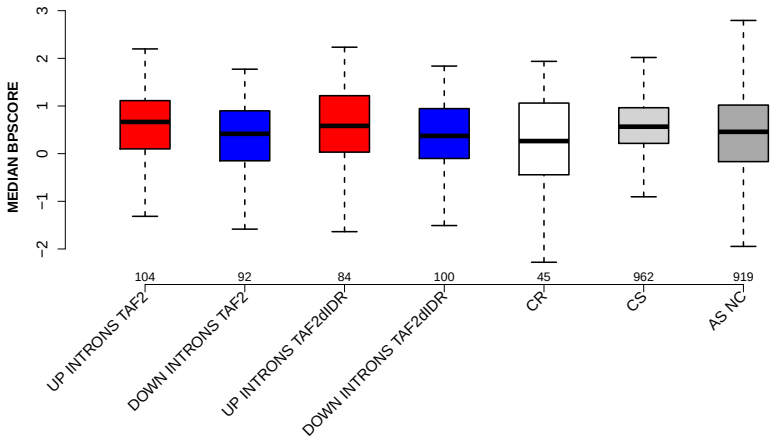

Significant results from Mann-Whitney U test:

- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 0.000331214
  mean: 24.455 < 29.2968 , median: 22 < 26
- `CS` vs `AS_NC` : 0.000237225
  mean: 29.2968 > 27.2514 , median: 26 > 24

## 6.30 MEDIAN BPSCORE

Back to: Overview | ToC

Meaning: like BPSCORE MAXBP but median over top-3 predicted BPs



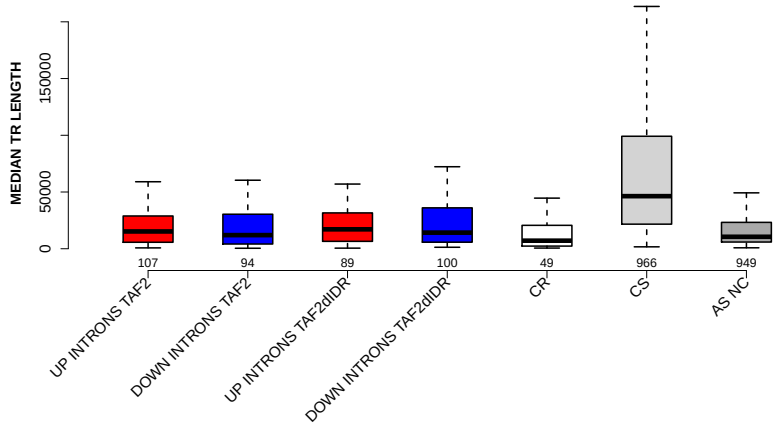

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CR` : 0.0493043
  mean: 0.321846 > 0.0460514 , median: 0.665263 > 0.264176
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 0.0235018
  mean: -0.0169653 < 0.523785 , median: 0.372218 < 0.565722
- `CR` vs `CS` : 0.00548657
  mean: 0.0460514 < 0.523785 , median: 0.264176 < 0.565722
- `CS` vs `AS_NC` : 0.000316957
  mean: 0.523785 > 0.264585 , median: 0.565722 > 0.45818

## 6.31 MEDIAN TR LENGTH

Back to: Overview | ToC

Meaning: median length of transcripts the intron occurs in




Significant results from Mann-Whitney U test:

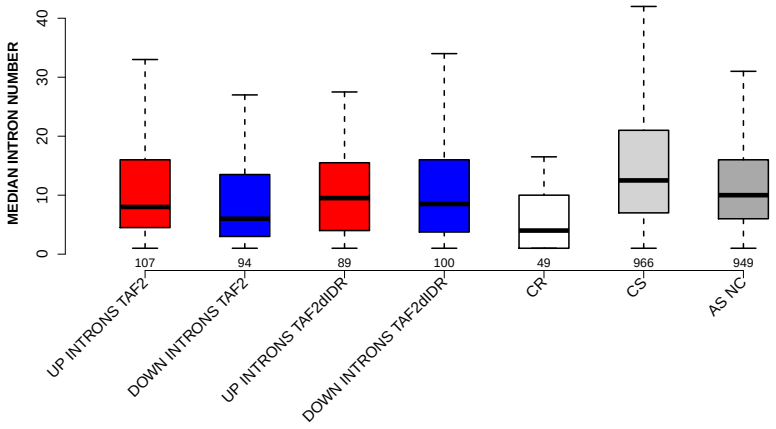
- UP_INTRONS_TAF2 vs CR : 0.0173738
  mean: 34139.5841 > 19738.1837 , median: 15230 > 7107
- UP_INTRONS_TAF2 vs CS : 2.59227e-19
  mean: 34139.5841 < 75308.278 , median: 15230 < 46337.5
- DOWN_INTRONS_TAF2 vs CS : 1.10492e-17
  mean: 29085.8138 < 75308.278 , median: 11998.5 < 46337.5
- UP_INTRONS_TAF2dIDR vs CR : 0.0116439
  mean: 33907.3427 > 19738.1837 , median: 17111 > 7107
- UP_INTRONS_TAF2dIDR vs CS : 4.85822e-14
  mean: 33907.3427 < 75308.278 , median: 17111 < 46337.5
- UP_INTRONS_TAF2dIDR vs AS_NC : 0.0214639
  mean: 33907.3427 > 20284.3203 , median: 17111 > 10531.5
- DOWN_INTRONS_TAF2dIDR vs CR : 0.0104752
  mean: 33619.035 > 19738.1837 , median: 14176.25 > 7107
- DOWN_INTRONS_TAF2dIDR vs CS : 1.71254e-15
  mean: 33619.035 < 75308.278 , median: 14176.25 < 46337.5
- CR vs CS : 1.02478e-14
  mean: 19738.1837 < 75308.278 , median: 7107 < 46337.5
- CR vs AS_NC : 0.0342503
  mean: 19738.1837 < 20284.3203 , median: 7107 < 10531.5

- `CS` vs `AS_NC` : 1.04971e-127
  mean: 75308.278 > 20284.3203 , median: 46337.5 > 10531.5

## 6.32 MEDIAN INTRON NUMBER

Back to: Overview | ToC

Meaning: number of introns of transcripts where intron occurs in




Significant results from Mann-Whitney U test:

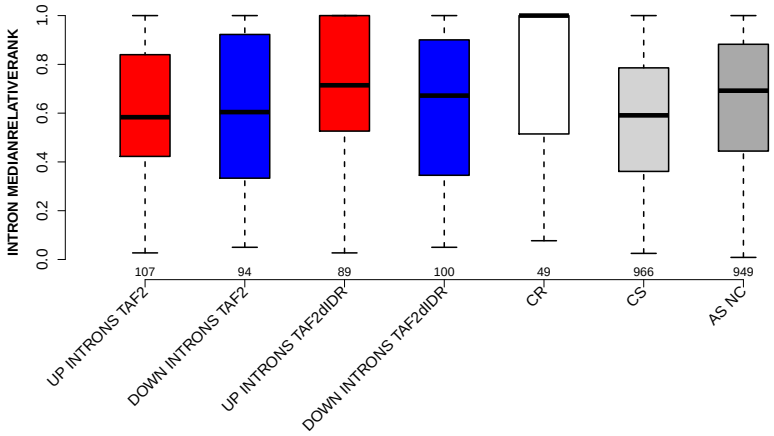
- `UP_INTRONS_TAF2` vs `DOWN_INTRONS_TAF2` : 0.0314383
  mean: 11.6308 > 8.734 , median: 8 > 6
- `UP_INTRONS_TAF2` vs `CR` : 6.326e-05
  mean: 11.6308 > 6.2857 , median: 8 > 4
- `UP_INTRONS_TAF2` vs `CS` : 1.54687e-05
  mean: 11.6308 < 16.4752 , median: 8 < 12.5
- `DOWN_INTRONS_TAF2` vs `CR` : 0.00716418
  mean: 8.734 > 6.2857 , median: 6 > 4
- `DOWN_INTRONS_TAF2` vs `CS` : 1.32177e-11
  mean: 8.734 < 16.4752 , median: 6 < 12.5
- `DOWN_INTRONS_TAF2` vs `AS_NC` : 9.82127e-06
  mean: 8.734 < 12.7339 , median: 6 < 10
- `UP_INTRONS_TAF2dIDR` vs `CR` : 0.000311467
  mean: 11.3258 > 6.2857 , median: 9.5 > 4
- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.000145679
  mean: 11.3258 < 16.4752 , median: 9.5 < 12.5
- `DOWN_INTRONS_TAF2dIDR` vs `CR` : 0.000485239
  mean: 10.93 > 6.2857 , median: 8.5 > 4
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 3.47182e-06
  mean: 10.93 < 16.4752 , median: 8.5 < 12.5

- DOWN_INTRONS_TAF2dIDR vs AS_NC : 0.0375664
  mean: 10.93 < 12.7339 , median: 8.5 < 10
- CR vs CS : 3.87834e-12
  mean: 6.2857 < 16.4752 , median: 4 < 12.5
- CR vs AS_NC : 2.5395e-08
  mean: 6.2857 < 12.7339 , median: 4 < 10
- CS vs AS_NC : 6.35515e-12
  mean: 16.4752 > 12.7339 , median: 12.5 > 10

## 6.33 INTRON MEDIANRELATIVERANK

Back to: Overview | ToC

Meaning: similar to INTRON MEDIANRANK, relative rank = rank / number of all introns in transcript, is between 0 and 1




Significant results from Mann-Whitney U test:

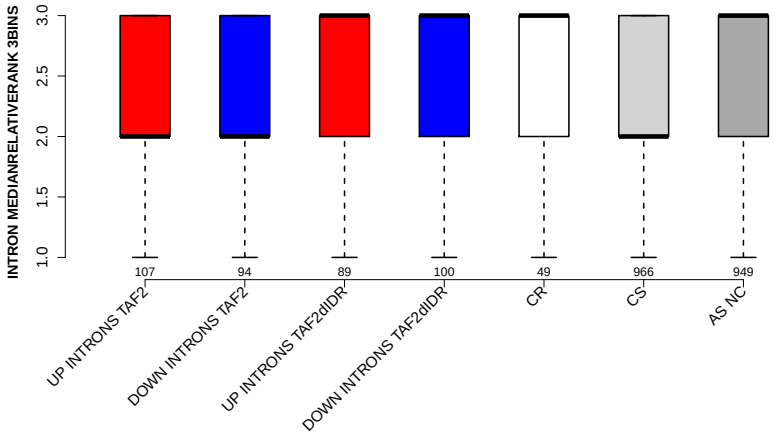
- UP_INTRONS_TAF2 vs UP_INTRONS_TAF2dIDR : 0.0158802
  mean: 0.617421 < 0.708616 , median: 0.583333 < 0.714286
- UP_INTRONS_TAF2 vs CR : 0.000130569
  mean: 0.617421 < 0.787237 , median: 0.583333 < 1
- DOWN_INTRONS_TAF2 vs UP_INTRONS_TAF2dIDR : 0.0334102
  mean: 0.607061 < 0.708616 , median: 0.604348 < 0.714286
- DOWN_INTRONS_TAF2 vs CR : 0.000319645
  mean: 0.607061 < 0.787237 , median: 0.604348 < 1
- UP_INTRONS_TAF2dIDR vs CR : 0.0168714
  mean: 0.708616 < 0.787237 , median: 0.714286 < 1
- UP_INTRONS_TAF2dIDR vs CS : 6.55648e-06
  mean: 0.708616 > 0.576095 , median: 0.714286 > 0.590972
- UP_INTRONS_TAF2dIDR vs AS_NC : 0.043831
  mean: 0.708616 > 0.649585 , median: 0.714286 > 0.692105
- DOWN_INTRONS_TAF2dIDR vs CR : 0.000505086
  mean: 0.625244 < 0.787237 , median: 0.671875 < 1
- CR vs CS : 6.74798e-08
  mean: 0.787237 > 0.576095 , median: 1 > 0.590972

- `CR` vs `AS_NC` : 3.6448e-05
  mean: 0.787237 > 0.649585 , median: 1 > 0.692105
- `CS` vs `AS_NC` : 1.47703e-09
  mean: 0.576095 < 0.649585 , median: 0.590972 < 0.692105

## 6.34 INTRON MEDIANRELATIVERANK 3BINS

Back to: Overview | ToC

Meaning: median bin into which INTRON MEDIANRELATIVERANK falls when binning 0-1 into 3 bins




Significant results from Mann-Whitney U test:

- UP_INTRONS_TAF2 vs UP_INTRONS_TAF2dIDR : 0.0268501
  mean: 2.3458 < 2.5506 , median: 2 < 3
- UP_INTRONS_TAF2 vs CR : 0.0308992
  mean: 2.3458 < 2.5714 , median: 2 < 3
- DOWN_INTRONS_TAF2 vs UP_INTRONS_TAF2dIDR : 0.0133042
  mean: 2.2553 < 2.5506 , median: 2 < 3
- DOWN_INTRONS_TAF2 vs CR : 0.0196318
  mean: 2.2553 < 2.5714 , median: 2 < 3
- UP_INTRONS_TAF2dIDR vs DOWN_INTRONS_TAF2dIDR : 0.0459304
  mean: 2.5506 > 2.32 , median: 3 = 3
- UP_INTRONS_TAF2dIDR vs CS : 2.36892e-05
  mean: 2.5506 > 2.2039 , median: 3 > 2
- DOWN_INTRONS_TAF2dIDR vs CR : 0.0493921
  mean: 2.32 < 2.5714 , median: 3 = 3
- CR vs CS : 0.00048695
  mean: 2.5714 > 2.2039 , median: 3 > 2
- CS vs AS_NC : 4.47311e-09
  mean: 2.2039 < 2.3962 , median: 2 < 3

## 6.35 INTRON MEDIANRELATIVERANK 5BINS

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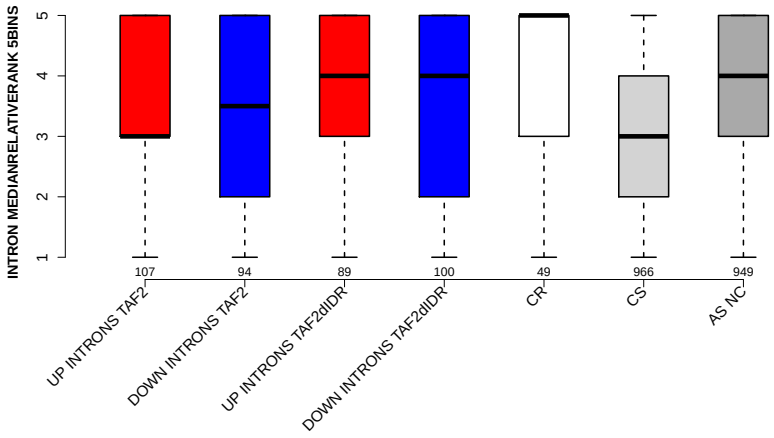
Meaning: similar to INTRON MEDIANRELATIVERANK 3BINS with 5 bins




Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `UP_INTRONS_TAF2dIDR` : 0.0186823
  mean: 3.4953 < 3.8989 , median: 3 < 4
- `UP_INTRONS_TAF2` vs `CR` : 0.000481161
  mean: 3.4953 < 4.1633 , median: 3 < 5
- `DOWN_INTRONS_TAF2` vs `CR` : 0.00276199
  mean: 3.4362 < 4.1633 , median: 3.5 < 5
- `UP_INTRONS_TAF2dIDR` vs `CR` : 0.0392587
  mean: 3.8989 < 4.1633 , median: 4 < 5
- `UP_INTRONS_TAF2dIDR` vs `CS` : 7.17099e-05
  mean: 3.8989 > 3.3437 , median: 4 > 3
- `DOWN_INTRONS_TAF2dIDR` vs `CR` : 0.00535933
  mean: 3.54 < 4.1633 , median: 4 < 5
- `CR` vs `CS` : 3.21625e-06
  mean: 4.1633 > 3.3437 , median: 5 > 3
- `CR` vs `AS_NC` : 0.00135058
  mean: 4.1633 > 3.6786 , median: 5 > 4
- `CS` vs `AS_NC` : 5.56003e-09
  mean: 3.3437 < 3.6786 , median: 3 < 4

## 6.36 INTRON MEDIANRELATIVERANK 10BINS

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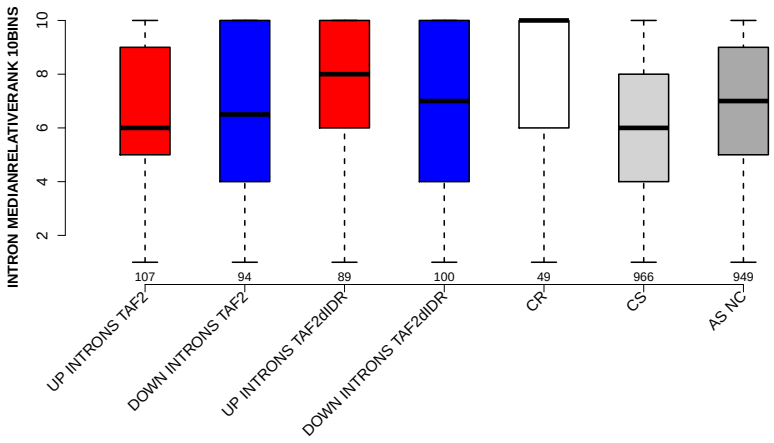
Meaning: similar to INTRON MEDIANRELATIVERANK 3BINS with 10 bins



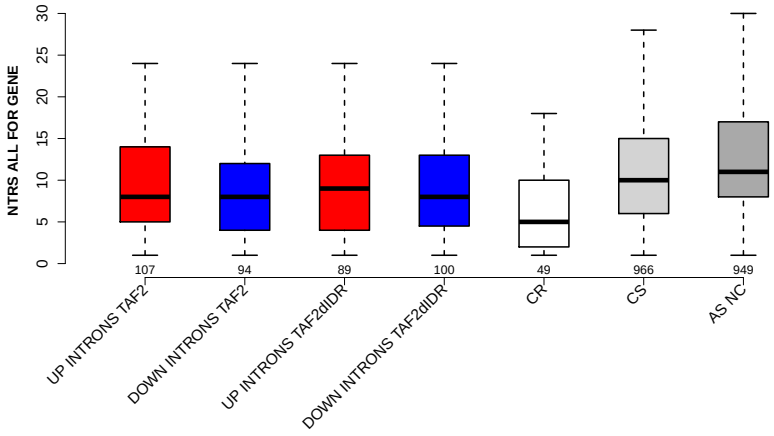

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `UP_INTRONS_TAF2dIDR` : 0.0125033
  mean: 6.6075 < 7.4944 , median: 6 < 8
- `UP_INTRONS_TAF2` vs `CR` : 0.000113986
  mean: 6.6075 < 8.1429 , median: 6 < 10
- `DOWN_INTRONS_TAF2` vs `CR` : 0.000849002
  mean: 6.5745 < 8.1429 , median: 6.5 < 10
- `UP_INTRONS_TAF2dIDR` vs `CR` : 0.0196503
  mean: 7.4944 < 8.1429 , median: 8 < 10
- `UP_INTRONS_TAF2dIDR` vs `CS` : 1.32532e-05
  mean: 7.4944 > 6.2588 , median: 8 > 6
- `DOWN_INTRONS_TAF2dIDR` vs `CR` : 0.000810084
  mean: 6.74 < 8.1429 , median: 7 < 10
- `CR` vs `CS` : 2.01587e-07
  mean: 8.1429 > 6.2588 , median: 10 > 6
- `CR` vs `AS_NC` : 8.77334e-05
  mean: 8.1429 > 6.9442 , median: 10 > 7
- `CS` vs `AS_NC` : 4.90923e-09
  mean: 6.2588 < 6.9442 , median: 6 < 7

## 6.37 NTRS ALL FOR GENE

Back to: Overview | ToC

Meaning: number of transcripts of gene where the intron occurs in




Significant results from Mann-Whitney U test:

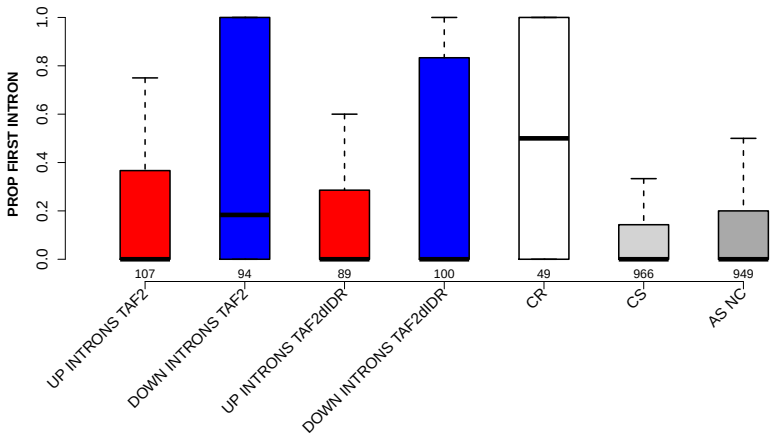
- `UP_INTRONS_TAF2` vs `CR` : 0.00206863
  mean: 10.0841 > 7.0204 , median: 8 > 5
- `UP_INTRONS_TAF2` vs `CS` : 0.0172566
  mean: 10.0841 < 11.266 , median: 8 < 10
- `UP_INTRONS_TAF2` vs `AS_NC` : 6.66437e-06
  mean: 10.0841 < 13.1423 , median: 8 < 11
- `DOWN_INTRONS_TAF2` vs `CR` : 0.025149
  mean: 8.6915 > 7.0204 , median: 8 > 5
- `DOWN_INTRONS_TAF2` vs `CS` : 0.000186757
  mean: 8.6915 < 11.266 , median: 8 < 10
- `DOWN_INTRONS_TAF2` vs `AS_NC` : 1.22017e-08
  mean: 8.6915 < 13.1423 , median: 8 < 11
- `UP_INTRONS_TAF2dIDR` vs `CR` : 0.0186041
  mean: 9.4831 > 7.0204 , median: 9 > 5
- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.00558034
  mean: 9.4831 < 11.266 , median: 9 < 10
- `UP_INTRONS_TAF2dIDR` vs `AS_NC` : 4.25044e-06
  mean: 9.4831 < 13.1423 , median: 9 < 11
- `DOWN_INTRONS_TAF2dIDR` vs `CR` : 0.00461313
  mean: 10.32 > 7.0204 , median: 8 > 5

- DOWN_INTRONS_TAF2dIDR vs CS : 0.0155785
  mean: 10.32 < 11.266 , median: 8 < 10
- DOWN_INTRONS_TAF2dIDR vs AS_NC : 1.11464e-05
  mean: 10.32 < 13.1423 , median: 8 < 11
- CR vs CS : 2.70254e-07
  mean: 7.0204 < 11.266 , median: 5 < 10
- CR vs AS_NC : 2.7049e-10
  mean: 7.0204 < 13.1423 , median: 5 < 11
- CS vs AS_NC : 7.55967e-08
  mean: 11.266 < 13.1423 , median: 10 < 11

## 6.38 PROP FIRST INTRON

Back to: Overview | ToC

Meaning: NTRS WITH INTRON AS FIRST INTRON / NTRS WITH INTRON




Significant results from Mann-Whitney U test:

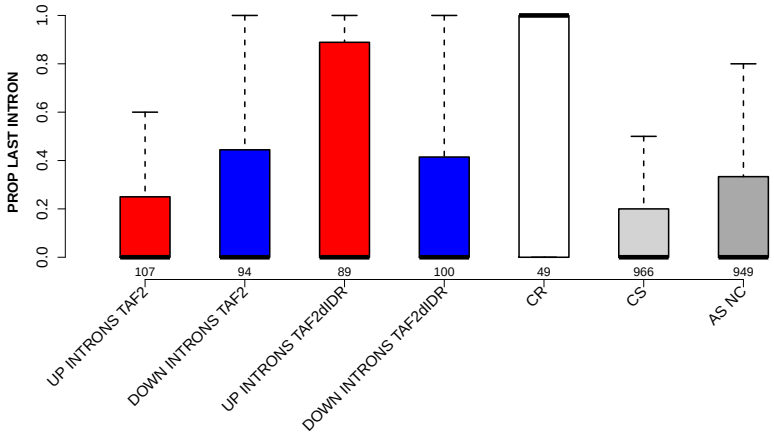
- UP_INTRONS_TAF2 vs DOWN_INTRONS_TAF2 : 0.0160008
  mean: 0.249383 < 0.377828 , median: 0 < 0.183333
- UP_INTRONS_TAF2 vs CR : 0.00794986
  mean: 0.249383 < 0.489456 , median: 0 < 0.5
- UP_INTRONS_TAF2 vs CS : 0.00647512
  mean: 0.249383 > 0.122024 , median: 0 = 0
- DOWN_INTRONS_TAF2 vs UP_INTRONS_TAF2dIDR : 0.0284241
  mean: 0.377828 > 0.250331 , median: 0.183333 > 0
- DOWN_INTRONS_TAF2 vs CS : 2.50783e-10
  mean: 0.377828 > 0.122024 , median: 0.183333 > 0
- DOWN_INTRONS_TAF2 vs AS_NC : 1.15924e-06
  mean: 0.377828 > 0.158179 , median: 0.183333 > 0
- UP_INTRONS_TAF2dIDR vs CR : 0.0175043
  mean: 0.250331 < 0.489456 , median: 0 < 0.5
- UP_INTRONS_TAF2dIDR vs CS : 0.00692755
  mean: 0.250331 > 0.122024 , median: 0 = 0
- DOWN_INTRONS_TAF2dIDR vs CS : 0.000498849
  mean: 0.305726 > 0.122024 , median: 0 = 0
- DOWN_INTRONS_TAF2dIDR vs AS_NC : 0.0387333
  mean: 0.305726 > 0.158179 , median: 0 = 0

- `CR` vs `CS` : 3.50239e-07
  mean: $0.489456 > 0.122024$ , median: $0.5 > 0$
- `CR` vs `AS_NC` : 4.14762e-05
  mean: $0.489456 > 0.158179$ , median: $0.5 > 0$
- `CS` vs `AS_NC` : 0.000628243
  mean: $0.122024 < 0.158179$ , median: $0 = 0$

## 6.39 PROP LAST INTRON

Back to: Overview | ToC

Meaning: NTRS WITH INTRON AS LAST INTRON / NTRS WITH INTRON



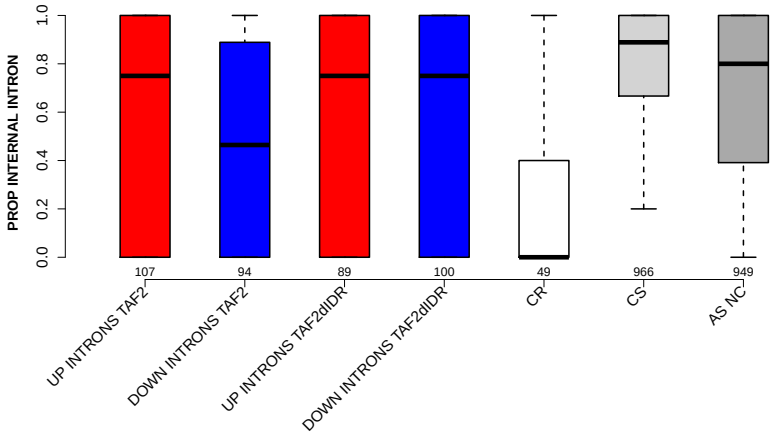

Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CR` : 6.86813e-06
  mean: 0.234986 $<$ 0.62619 , median: 0 $<$ 1
- `DOWN_INTRONS_TAF2` vs `CR` : 5.11313e-05
  mean: 0.272826 $<$ 0.62619 , median: 0 $<$ 1
- `DOWN_INTRONS_TAF2` vs `CS` : 0.0237306
  mean: 0.272826 $>$ 0.152926 , median: 0 = 0
- `UP_INTRONS_TAF2dIDR` vs `CR` : 0.000346648
  mean: 0.307074 $<$ 0.62619 , median: 0 $<$ 1
- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.00664224
  mean: 0.307074 $>$ 0.152926 , median: 0 = 0
- `DOWN_INTRONS_TAF2dIDR` vs `CR` : 3.59589e-05
  mean: 0.26214 $<$ 0.62619 , median: 0 $<$ 1
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 0.0170834
  mean: 0.26214 $>$ 0.152926 , median: 0 = 0
- `CR` vs `CS` : 6.34572e-12
  mean: 0.62619 $>$ 0.152926 , median: 1 $>$ 0
- `CR` vs `AS_NC` : 1.77408e-07
  mean: 0.62619 $>$ 0.237764 , median: 1 $>$ 0
- `CS` vs `AS_NC` : 5.66807e-09
  mean: 0.152926 $<$ 0.237764 , median: 0 = 0

## 6.40 PROP INTERNAL INTRON

Back to: Overview | ToC

Meaning: NTRS WITH INTRON AS INTERNAL INTRON / NTRS WITH INTRON




Significant results from Mann-Whitney U test:

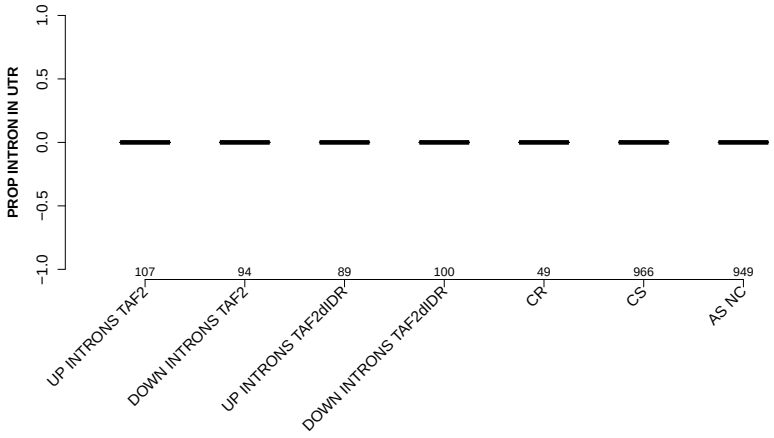
- `UP_INTRONS_TAF2` vs `DOWN_INTRONS_TAF2` : 0.0260942
  mean: 0.596639 > 0.46737 , median: 0.75 > 0.464286
- `UP_INTRONS_TAF2` vs `CR` : 1.07198e-05
  mean: 0.596639 > 0.242857 , median: 0.75 > 0
- `UP_INTRONS_TAF2` vs `CS` : 0.00202874
  mean: 0.596639 < 0.750345 , median: 0.75 < 0.888889
- `DOWN_INTRONS_TAF2` vs `CR` : 0.00215016
  mean: 0.46737 > 0.242857 , median: 0.464286 > 0
- `DOWN_INTRONS_TAF2` vs `CS` : 6.29367e-10
  mean: 0.46737 < 0.750345 , median: 0.464286 < 0.888889
- `DOWN_INTRONS_TAF2` vs `AS_NC` : 0.00026969
  mean: 0.46737 < 0.647068 , median: 0.464286 < 0.8
- `UP_INTRONS_TAF2dIDR` vs `CR` : 0.00012496
  mean: 0.569552 > 0.242857 , median: 0.75 > 0
- `UP_INTRONS_TAF2dIDR` vs `CS` : 0.000164199
  mean: 0.569552 < 0.750345 , median: 0.75 < 0.888889
- `DOWN_INTRONS_TAF2dIDR` vs `CR` : 7.70196e-05
  mean: 0.557913 > 0.242857 , median: 0.75 > 0
- `DOWN_INTRONS_TAF2dIDR` vs `CS` : 3.14037e-05
  mean: 0.557913 < 0.750345 , median: 0.75 < 0.888889

- `CR` vs `CS` : 1.2596e-12
  mean: $0.242857 < 0.750345$ , median: $0 < 0.888889$
- `CR` vs `AS_NC` : 1.58787e-08
  mean: $0.242857 < 0.647068$ , median: $0 < 0.8$
- `CS` vs `AS_NC` : 1.08108e-10
  mean: $0.750345 > 0.647068$ , median: $0.888889 > 0.8$

## 6.41 PROP INTRON IN UTR

Back to: Overview | ToC

Meaning: NTRS WITH INTRON IN UTR / NTRS WITH INTRON




Significant results from Mann-Whitney U test:

- `UP_INTRONS_TAF2` vs `CS` : 0.0355764
  mean: 0.0251573 > 0.0111757 , median: 0 = 0
- `DOWN_INTRONS_TAF2` vs `UP_INTRONS_TAF2dIDR` : 0.0224228
  mean: 0.0411585 > 0.0138109 , median: 0 = 0
- `DOWN_INTRONS_TAF2` vs `CS` : 0.00287597
  mean: 0.0411585 > 0.0111757 , median: 0 = 0
- `CS` vs `AS_NC` : 0.00606231
  mean: 0.0111757 < 0.0200644 , median: 0 = 0