# 

December 8, 2023 Matt version 1.3.0

## **Contents**

1	Infos	3
2	Warning: Please read this note carefully	3
3	Notes for publishing results	3
4	Data sets	4
5	Overview: Features with statistically significant differences (p-val $\leq 0.05$ )	5
6		15
	6.1 INTRON LENGTH	15
	6.2 UPEXON MEDIANLENGTH	17
	6.3 DOEXON MEDIANLENGTH	19
	6.4 RATIO UPEXON INTRON LENGTH	91

6.5	RATIO DOEXON INTRON LENGTH	23
6.6	INTRON GCC	25
6.7	UPEXON GCC	27
6.8	DOEXON GCC	28
6.9	RATIO UPEXON INTRON GCC	30
	RATIO DOEXON INTRON GCC	
	SF1 HIGHESTSCORE 3SS	
6.12	INTRON 5SS 20INT10EX GCC	34
	INTRON 3SS 20INT10EX GCC	
6.14	MAXENTSCR HSAMODEL 5SS	37
6.15	MAXENTSCR HSAMODEL 3SS	39
6.16	DIST FROM MAXBP TO 3SS	41
6.17	SCORE FOR MAXBP SEQ	42
6.18	PYRIMIDINECONT MAXBP	43
	POLYPYRITRAC OFFSET MAXBP	
	POLYPYRITRAC LEN MAXBP	
	POLYPYRITRAC SCORE MAXBP	
6.22	BPSCORE MAXBP	48
6.23	NUM PREDICTED BPS	49
	MEDIAN DIST FROM BP TO 3SS	
6.25	MEDIAN SCORE FOR BPSEQ	51
6.26	MEDIAN PYRIMIDINECONT	52
6.27	MEDIAN POLYPYRITRAC OFFSET	53
6.28	MEDIAN POLYPYRITRAC LEN	54
6.29	MEDIAN POLYPYRITRAC SCORE	55
6.30	MEDIAN BPSCORE	56
6.31	MEDIAN TR LENGTH	57
	MEDIAN INTRON NUMBER	
	INTRON MEDIANRELATIVERANK	
6.34	INTRON MEDIANRELATIVERANK 3BINS	63
	INTRON MEDIANRELATIVERANK 5BINS	
6.36	INTRON MEDIANRELATIVERANK 10BINS	65
	NTRS ALL FOR GENE	
	PROP FIRST INTRON	
	PROP LAST INTRON	
6.40	PROP INTERNAL INTRON	73
6.41	PROP INTRON IN HTR	75

## 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:
```

ALL\_INTRONS.tab

Selection criteria for defining intron groups:

UP\_INTRONS\_BOTH : having value UP\_INTRONS\_BOTH in column GROUP
UP\_INTRONS\_TAF2 : having value UP\_INTRONS\_TAF2 in column GROUP
UP\_INTRONS\_TAF2dIDR : having value UP\_INTRONS\_TAF2dIDR in column GROUP
DOWN\_INTRONS\_BOTH : having value DOWN\_INTRONS\_BOTH in column GROUP
DOWN\_INTRONS\_TAF2 : having value DOWN\_INTRONS\_TAF2 in column GROUP
DOWN\_INTRONS\_TAF2dIDR : having value DOWN\_INTRONS\_TAF2dIDR in column GROUP

CR : having value CR in column GROUP

AS\_NC : having value AS\_NC in column GROUP

CS: having value CS 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.

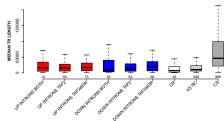
UP\_INTRONS\_BOTH: 18 / 14 UP\_INTRONS\_TAF2: 102 / 93 UP\_INTRONS\_TAF2dIDR: 78 / 75 DOWN\_INTRONS\_BOTH: 32 / 32 DOWN\_INTRONS\_TAF2: 67 / 62 DOWN\_INTRONS\_TAF2dIDR: 73 / 68

CR: 50 / 49

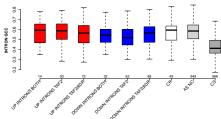
 $\begin{array}{lll} {\tt AS\_NC:~1000~/~949} \\ {\tt CS:~1000~/~966} \end{array}$ 

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

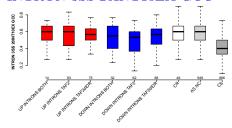
# MEDIAN TR LENGTH



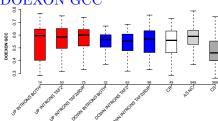
# INTRON GCC



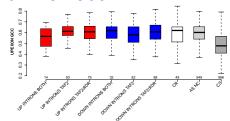
# INTRON 3SS 20INT10EX GCC

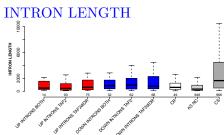


# DOEXON GCC

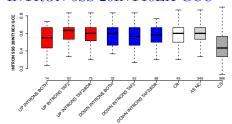


# UPEXON GCC

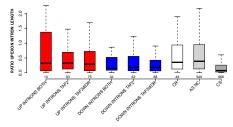




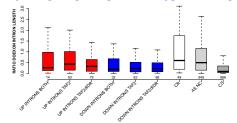
## INTRON 5SS 20INT10EX GCC



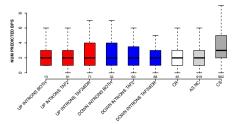
# RATIO UPEXON INTRON LENGTH



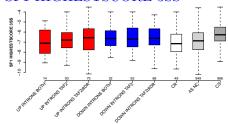
# RATIO DOEXON INTRON LENGTH

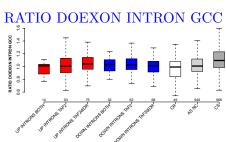


# NUM PREDICTED BPS

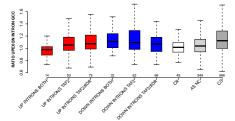


# SF1 HIGHESTSCORE 3SS

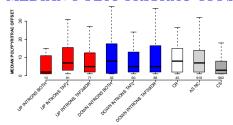




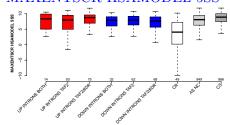
# RATIO UPEXON INTRON GCC

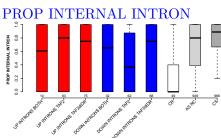


# MEDIAN POLYPYRITRAC OFFSET

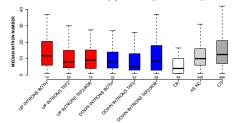


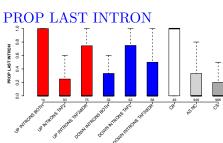
# MAXENTSCR HSAMODEL 5SS

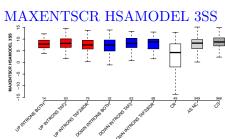


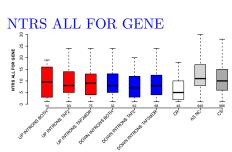


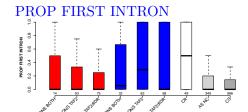
# MEDIAN INTRON NUMBER



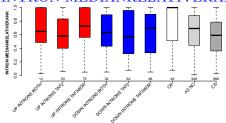




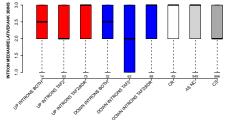


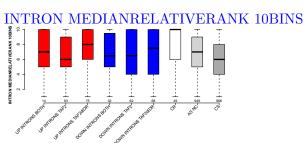




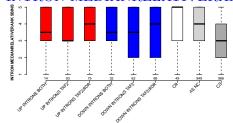


# INTRON MEDIANRELATIVERANK 3BINS

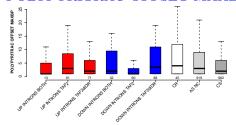




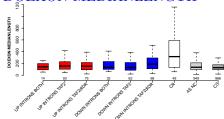
## INTRON MEDIANRELATIVERANK 5BINS



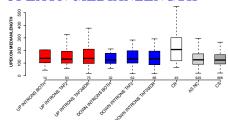
# POLYPYRITRAC OFFSET MAXBP



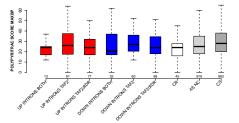
# $D_{\frac{8}{2}1}^{OEXON}$ MEDIANLENGTH



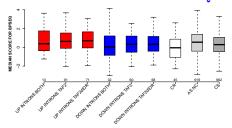
# UPEXON MEDIANLENGTH



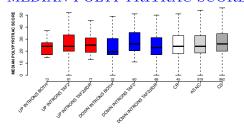
# POLYPYRITRAC SCORE MAXBP



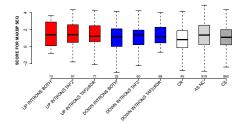
# MEDIAN SCORE FOR BPSEQ



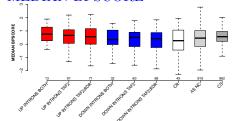
# MEDIAN POLYPYRITRAC SCORE



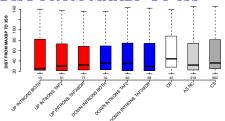
# SCORE FOR MAXBP SEQ



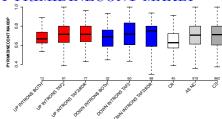
# MEDIAN BPSCORE

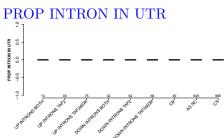


# DIST FROM MAXBP TO 3SS

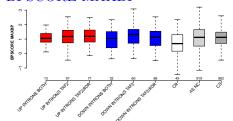


## PYRIMIDINECONT MAXBP

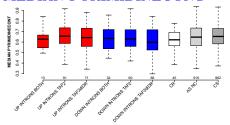




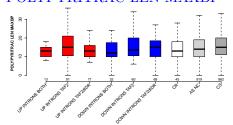
# BPSCORE MAXBP

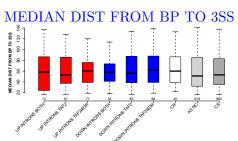


# MEDIAN PYRIMIDINECONT



# POLYPYRITRAC LEN MAXBP



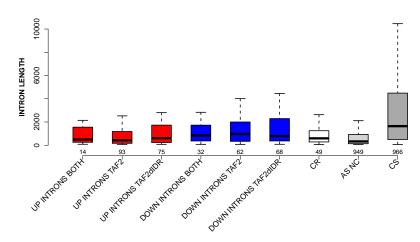


# 6 Details: Box plots and statistical assessments for all features

### 6.1 INTRON LENGTH

Back to: Overview | ToC

Meaning:



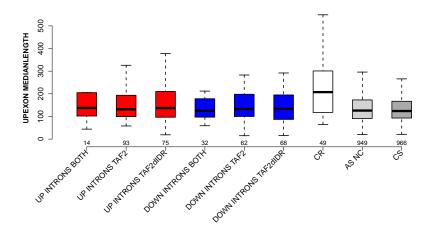
- UP\_INTRONS\_BOTH vs CS : 0.0319072 mean: 1864.3571 < 5064.7308, median: 488.5 < 1641
- UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2 : 0.0338278 mean: 1950.7957 > 1634.4355 , median: 430 < 966
- UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2dIDR : 0.0136675 mean: 1950.7957 > 1719.5147, median: 430 < 789
- UP\_INTRONS\_TAF2 vs AS\_NC : 0.0387461 mean: 1950.7957 > 888.0242, median: 430 > 325
- UP\_INTRONS\_TAF2 vs CS : 5.3078e-10 mean: 1950.7957 < 5064.7308, median: 430 < 1641
- UP\_INTRONS\_TAF2dIDR vs AS\_NC : 0.00101715 mean: 1904.48 > 888.0242, median: 607 > 325
- UP\_INTRONS\_TAF2dIDR vs CS : 7.28154e-06 mean: 1904.48 < 5064.7308 , median: 607 < 1641
- $\bullet$  DOWN\_INTRONS\_BOTH vs AS\_NC : 0.00159833 mean: 1747.1562 > 888.0242 , median: 846 > 325

- DOWN\_INTRONS\_BOTH vs CS : 0.0116022 mean: 1747.1562 < 5064.7308, median: 846 < 1641
- DOWN\_INTRONS\_TAF2 vs AS\_NC : 8.88009e-06 mean: 1634.4355 > 888.0242 , median: 966 > 325
- DOWN\_INTRONS\_TAF2 vs CS : 0.002121 mean: 1634.4355 < 5064.7308, median: 966 < 1641
- DOWN\_INTRONS\_TAF2dIDR vs AS\_NC : 5.15012e-07 mean: 1719.5147 > 888.0242, median: 789 > 325
- DOWN\_INTRONS\_TAF2dIDR vs CS : 0.00296312 mean: 1719.5147 < 5064.7308, median: 789 < 1641
- CR vs AS\_NC : 0.0129423 mean: 1180.3673 > 888.0242, median: 592 > 325
- CR vs CS : 1.42888e-05 mean: 1180.3673 < 5064.7308, median: 592 < 1641

#### 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



- UP\_INTRONS\_TAF2 vs CR: 0.00229606
  - mean: 189.3065 < 382.9694, median: 131 < 207.5
- UP\_INTRONS\_TAF2 vs CS: 0.0465232
  - mean: 189.3065 > 143.0047, median: 131 > 124
- $\bullet$  UP\_INTRONS\_TAF2dIDR vs CR : 0.0138533
  - mean: 207.2267 < 382.9694, median: 137 < 207.5
- UP\_INTRONS\_TAF2dIDR vs AS\_NC: 0.037377
  - mean: 207.2267 > 163.4842, median: 137 > 126
- UP\_INTRONS\_TAF2dIDR vs CS: 0.0125507
  - mean: 207.2267 > 143.0047, median: 137 > 124
- DOWN\_INTRONS\_BOTH vs CR: 0.00331334
  - mean: 197.2344 < 382.9694, median: 125 < 207.5
- $\bullet$  DOWN\_INTRONS\_TAF2 vs CR : 0.00564919
  - mean: 173.0484 < 382.9694, median: 132.75 < 207.5
- DOWN\_INTRONS\_TAF2dIDR vs CR: 0.00136667
  - mean: 192.2868 < 382.9694, median: 133.5 < 207.5
- CR vs AS\_NC: 1.13843e-06
- mean: 382.9694 > 163.4842, median: 207.5 > 126

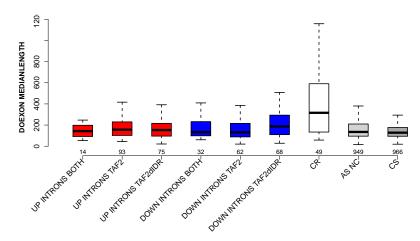
 $\bullet$  CR vs CS: 1.08981e-07

mean: 382.9694 > 143.0047, median: 207.5 > 124

#### 6.3 DOEXON MEDIANLENGTH

Back to: Overview | ToC

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



- UP\_INTRONS\_BOTH vs CR: 0.018884
  - mean: 199.75 < 521.5306, median: 142.5 < 316
- $\bullet$  UP\_INTRONS\_TAF2 vs CR : 0.00221534
  - mean: 369.3925 < 521.5306, median: 156 < 316
- $\bullet$  UP\_INTRONS\_TAF2 vs CS: 0.00350062
  - mean: 369.3925 > 257.1242, median: 156 > 128
- UP\_INTRONS\_TAF2dIDR vs CR: 0.00117214
  - mean: 328.5333 < 521.5306, median: 153 < 316
- UP\_INTRONS\_TAF2dIDR vs CS: 0.0297117
  - mean: 328.5333 > 257.1242, median: 153 > 128
- DOWN\_INTRONS\_BOTH vs CR: 0.00202324
  - mean: 231.3125 < 521.5306, median: 133.25 < 316
- $\bullet$  DOWN\_INTRONS\_TAF2 vs CR : 0.000250964
  - mean: 242.1855 < 521.5306, median: 131.75 < 316
- $\bullet$  DOWN\_INTRONS\_TAF2dIDR vs CR : 0.0243675
  - mean: 346.1838 < 521.5306, median: 187.5 < 316
- DOWN\_INTRONS\_TAF2dIDR vs AS\_NC: 0.0124241
  - mean: 346.1838 > 263.8467, median: 187.5 > 135
- $\bullet$  DOWN\_INTRONS\_TAF2dIDR vs CS : 0.000500713
- mean: 346.1838 > 257.1242, median: 187.5 > 128

 $\bullet$  CR vs AS\_NC : 2.11858e-06

mean: 521.5306 > 263.8467, median: 316 > 135

 $\bullet$  CR vs CS :  $6.08766\mathrm{e}\text{-}08$ 

mean: 521.5306 > 257.1242, median: 316 > 128

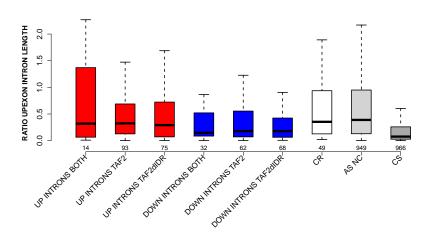
 $\bullet$  AS\_NC vs CS : 0.0136925

mean: 263.8467 > 257.1242, median: 135 > 128

#### 6.4 RATIO UPEXON INTRON LENGTH

Back to: Overview | ToC

Meaning: median up-stream exon length / intron length



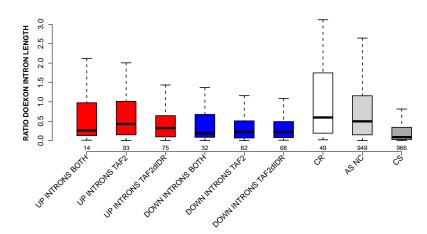
- UP\_INTRONS\_BOTH vs CS : 0.0238697 mean: 0.673402 > 0.263246 , median: 0.31898 > 0.0762247
- UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2 : 0.0365227 mean: 0.567473 > 0.455635 , median: 0.323276 > 0.178921
- UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2dIDR : 0.00675129 mean: 0.567473 > 0.316967, median: 0.323276 > 0.17942
- UP\_INTRONS\_TAF2 vs CS : 1.10541e-12 mean: 0.567473 > 0.263246 , median: 0.323276 > 0.0762247
- UP\_INTRONS\_TAF2dIDR vs AS\_NC : 0.0204697 mean: 0.674796 < 0.688341, median: 0.291785 < 0.388889
- UP\_INTRONS\_TAF2dIDR vs CS : 3.26545e-07 mean: 0.674796 > 0.263246, median: 0.291785 > 0.0762247
- DOWN\_INTRONS\_BOTH vs CR : 0.0287945 mean: 0.396976 < 1.2375 , median: 0.147243 < 0.35337
- DOWN\_INTRONS\_BOTH vs AS\_NC : 0.0120369 mean: 0.396976 < 0.688341 , median: 0.147243 < 0.388889
- DOWN\_INTRONS\_BOTH vs CS : 0.00452369 mean: 0.396976 > 0.263246 , median: 0.147243 > 0.0762247
- DOWN\_INTRONS\_TAF2 vs CR : 0.0119026 mean: 0.455635 < 1.2375, median: 0.178921 < 0.35337

- DOWN\_INTRONS\_TAF2 vs AS\_NC : 0.000635304 mean: 0.455635 < 0.688341, median: 0.178921 < 0.388889
- DOWN\_INTRONS\_TAF2 vs CS : 0.000303367 mean: 0.455635 > 0.263246 , median: 0.178921 > 0.0762247
- DOWN\_INTRONS\_TAF2dIDR vs CR : 0.00235585 mean: 0.316967 < 1.2375, median: 0.17942 < 0.35337
- DOWN\_INTRONS\_TAF2dIDR vs AS\_NC : 1.31555e-05 mean: 0.316967 < 0.688341 , median: 0.17942 < 0.388889
- DOWN\_INTRONS\_TAF2dIDR vs CS : 0.000571469 mean: 0.316967 > 0.263246, median: 0.17942 > 0.0762247
- AS\_NC vs CS : 1.89983e-80 mean: 0.688341 > 0.263246 , median: 0.388889 > 0.0762247

### 6.5 RATIO DOEXON INTRON LENGTH

Back to: Overview | ToC

Meaning: median down-stream exon length / intron length



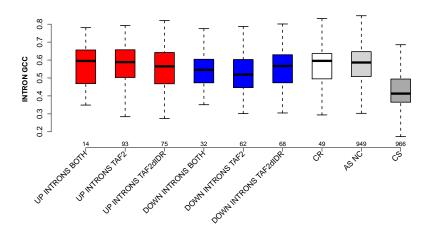
- UP\_INTRONS\_BOTH vs CS : 0.0405515 mean: 0.648221 > 0.393069, median: 0.264271 > 0.0895518
- UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_BOTH : 0.0480265 mean: 0.810029 > 0.587178, median: 0.429134 > 0.189935
- UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2 : 0.010846 mean: 0.810029 > 0.494221 , median: 0.429134 > 0.225852
- UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2dIDR : 0.0200423 mean: 0.810029 > 0.647612 , median: 0.429134 > 0.223953
- UP\_INTRONS\_TAF2 vs CS : 2.33185e-12 mean: 0.810029 > 0.393069 , median: 0.429134 > 0.0895518
- UP\_INTRONS\_TAF2dIDR vs CR : 0.0272472 mean: 0.891564 < 1.4742, median: 0.324042 < 0.597403
- UP\_INTRONS\_TAF2dIDR vs AS\_NC : 0.0100959 mean: 0.891564 < 1.0008, median: 0.324042 < 0.497856
- UP\_INTRONS\_TAF2dIDR vs CS : 9.77386e-07 mean: 0.891564 > 0.393069 , median: 0.324042 > 0.0895518
- DOWN\_INTRONS\_BOTH vs CR : 0.00684485 mean: 0.587178 < 1.4742 , median: 0.189935 < 0.597403
- DOWN\_INTRONS\_BOTH vs AS\_NC : 0.00745083 mean: 0.587178 < 1.0008, median: 0.189935 < 0.497856

- DOWN\_INTRONS\_BOTH vs CS : 0.0113476 mean: 0.587178 > 0.393069, median: 0.189935 > 0.0895518
- DOWN\_INTRONS\_TAF2 vs CR : 0.00199438 mean: 0.494221 < 1.4742 , median: 0.225852 < 0.597403
- DOWN\_INTRONS\_TAF2 vs AS\_NC : 0.00011546 mean: 0.494221 < 1.0008, median: 0.225852 < 0.497856
- DOWN\_INTRONS\_TAF2 vs CS : 0.00149549 mean: 0.494221 > 0.393069 , median: 0.225852 > 0.0895518
- DOWN\_INTRONS\_TAF2dIDR vs CR : 0.00298336 mean: 0.647612 < 1.4742, median: 0.223953 < 0.597403
- DOWN\_INTRONS\_TAF2dIDR vs AS\_NC : 0.000253908 mean: 0.647612 < 1.0008, median: 0.223953 < 0.497856
- DOWN\_INTRONS\_TAF2dIDR vs CS : 2.74214e-05 mean: 0.647612 > 0.393069, median: 0.223953 > 0.0895518

### 6.6 INTRON GCC

Back to: Overview | ToC

Meaning: GC content of entire intron sequence



- UP\_INTRONS\_BOTH vs CS : 0.00015897 mean: 0.574644 > 0.436335, median: 0.594845 > 0.41294
- UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2 : 0.0100235 mean: 0.56771 > 0.522052 , median: 0.588608 > 0.518976
- UP\_INTRONS\_TAF2 vs CS : 1.25127e-20 mean: 0.56771 > 0.436335, median: 0.588608 > 0.41294
- UP\_INTRONS\_TAF2dIDR vs CS : 4.04148e-15 mean: 0.55605 > 0.436335 , median: 0.565047 > 0.41294
- DOWN\_INTRONS\_BOTH vs CS : 1.28579e-07 mean: 0.544086 > 0.436335, median: 0.545459 > 0.41294
- DOWN\_INTRONS\_TAF2 vs CR : 0.0379348 mean: 0.522052 < 0.567094, median: 0.518976 < 0.595349
- DOWN\_INTRONS\_TAF2 vs AS\_NC : 0.000402204 mean: 0.522052 < 0.573131 , median: 0.518976 < 0.586288
- DOWN\_INTRONS\_TAF2 vs CS : 1.60088e-08 mean: 0.522052 > 0.436335, median: 0.518976 > 0.41294
- DOWN\_INTRONS\_TAF2dIDR vs CS : 4.8449e-16 mean: 0.557781 > 0.436335, median: 0.566865 > 0.41294
- CR vs CS : 8.34462e-12 mean: 0.567094 > 0.436335, median: 0.595349 > 0.41294

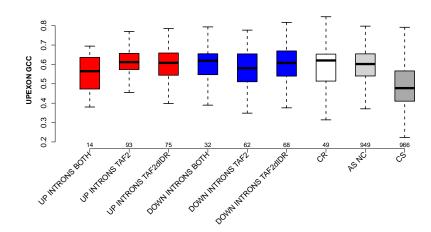
 $\bullet$  AS\_NC vs CS :  $2.805 \mathrm{e}\text{-}125$ 

mean: 0.573131 > 0.436335 , median: 0.586288 > 0.41294

### 6.7 UPEXON GCC

Back to: Overview | ToC

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

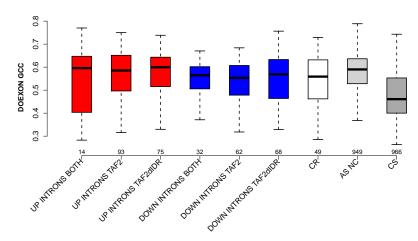


- UP\_INTRONS\_BOTH vs CS : 0.0269237 mean: 0.554024 > 0.492495 , median: 0.565126 > 0.477628
- UP\_INTRONS\_TAF2 vs CS : 2.77629e-20 mean: 0.601513 > 0.492495 , median: 0.611969 > 0.477628
- UP\_INTRONS\_TAF2dIDR vs CS : 1.13556e-14 mean: 0.59602 > 0.492495, median: 0.607843 > 0.477628
- DOWN\_INTRONS\_BOTH vs CS : 3.09711e-09 mean: 0.61184 > 0.492495 , median: 0.619115 > 0.477628
- DOWN\_INTRONS\_TAF2 vs CS : 1.84487e-09 mean: 0.576268 > 0.492495, median: 0.580353 > 0.477628
- DOWN\_INTRONS\_TAF2dIDR vs CS : 1.80128e-12 mean: 0.595372 > 0.492495, median: 0.60769 > 0.477628
- AS\_NC vs CS : 1.61282e-89 mean: 0.592162 > 0.492495 , median: 0.60197 > 0.477628

### 6.8 DOEXON GCC

Back to: Overview | ToC

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



- UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2 : 0.0413531 mean: 0.567845 > 0.53586 , median: 0.585366 > 0.553218
- UP\_INTRONS\_TAF2 vs CS : 3.06382e-14 mean: 0.567845 > 0.478673 , median: 0.585366 > 0.460893
- UP\_INTRONS\_TAF2dIDR vs DOWN\_INTRONS\_TAF2 : 0.0221586 mean: 0.570925 > 0.53586 , median: 0.599476 > 0.553218
- UP\_INTRONS\_TAF2dIDR vs CS : 3.3646e-13 mean: 0.570925 > 0.478673 , median: 0.599476 > 0.460893
- DOWN\_INTRONS\_BOTH vs CS : 1.94043e-05 mean: 0.552511 > 0.478673, median: 0.564808 > 0.460893
- DOWN\_INTRONS\_TAF2 vs AS\_NC : 0.00090594 mean: 0.53586 < 0.578015 , median: 0.553218 < 0.59
- DOWN\_INTRONS\_TAF2 vs CS : 7.91881e-06 mean: 0.53586 > 0.478673, median: 0.553218 > 0.460893
- DOWN\_INTRONS\_TAF2dIDR vs CS : 4.19052e-08 mean: 0.553901 > 0.478673, median: 0.569048 > 0.460893
- $\bullet$  CR vs CS : 0.000121241 mean: 0.540458 > 0.478673 , median: 0.558824 > 0.460893

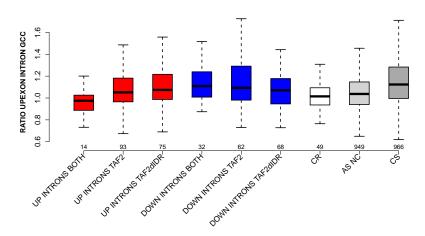
 $\bullet$  AS\_NC vs CS :  $2.08968 \mathrm{e}\text{-}95$ 

mean: 0.578015 > 0.478673 , median: 0.59 > 0.460893

### 6.9 RATIO UPEXON INTRON GCC

Back to: Overview | ToC

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



- UP\_INTRONS\_BOTH vs UP\_INTRONS\_TAF2dIDR : 0.0260428 mean: 0.985183 < 1.0997, median: 0.974525 < 1.0739
- UP\_INTRONS\_BOTH vs DOWN\_INTRONS\_BOTH : 0.00910121 mean: 0.985183 < 1.1504 , median: 0.974525 < 1.1092
- UP\_INTRONS\_BOTH vs DOWN\_INTRONS\_TAF2 : 0.0173882 mean: 0.985183 < 1.139, median: 0.974525 < 1.0931
- UP\_INTRONS\_BOTH vs CS : 0.0026906 mean: 0.985183 < 1.1559 , median: 0.974525 < 1.1235
- UP\_INTRONS\_TAF2 vs CS : 0.00431397 mean: 1.0903 < 1.1559, median: 1.0518 < 1.1235
- UP\_INTRONS\_TAF2dIDR vs AS\_NC : 0.0338089 mean: 1.0997 > 1.0541, median: 1.0739 > 1.037
- DOWN\_INTRONS\_BOTH vs CR : 0.0234845 mean: 1.1504 > 1.0397, median: 1.1092 > 1.0149
- DOWN\_INTRONS\_BOTH vs AS\_NC : 0.0111582 mean: 1.1504 > 1.0541, median: 1.1092 > 1.037
- DOWN\_INTRONS\_TAF2 vs CR : 0.0217166 mean: 1.139 > 1.0397, median: 1.0931 > 1.0149
- DOWN\_INTRONS\_TAF2 vs AS\_NC : 0.00778597 mean: 1.139 > 1.0541, median: 1.0931 > 1.037

 $\bullet$  DOWN\_INTRONS\_TAF2dIDR vs CS : 0.0153191

mean: 1.0812 < 1.1559, median: 1.0706 < 1.1235

 $\bullet$  CR vs CS : 0.000345774

mean: 1.0397 < 1.1559 , median: 1.0149 < 1.1235

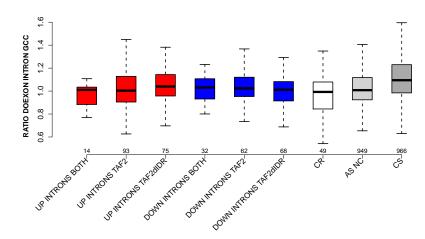
 $\bullet$  AS\_NC vs CS :  $2.69574\mathrm{e}\text{-}23$ 

mean: 1.0541 < 1.1559 , median: 1.037 < 1.1235

### 6.10 RATIO DOEXON INTRON GCC

Back to: Overview | ToC

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

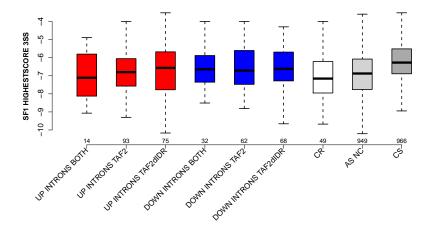


- UP\_INTRONS\_BOTH vs CS : 0.00122865 mean: 0.946644 < 1.1219 , median: 1.0102 < 1.0946
- UP\_INTRONS\_TAF2 vs CS : 2.24158e-06 mean: 1.0203 < 1.1219, median: 1.0038 < 1.0946
- UP\_INTRONS\_TAF2dIDR vs CS : 0.00450455 mean: 1.055 < 1.1219, median: 1.0402 < 1.0946
- DOWN\_INTRONS\_BOTH vs CS : 0.0094141 mean: 1.0318 < 1.1219 , median: 1.0312 < 1.0946
- DOWN\_INTRONS\_TAF2 vs CS : 0.00151609 mean: 1.049 < 1.1219, median: 1.0231 < 1.0946
- DOWN\_INTRONS\_TAF2dIDR vs CS : 1.94194e-06 mean: 1.002 < 1.1219, median: 1.0114 < 1.0946
- AS\_NC vs CS : 8.35131e-28 mean: 1.0283 < 1.1219, median: 1.0078 < 1.0946

#### 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

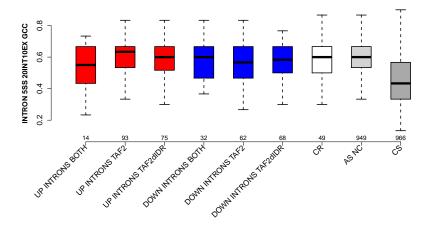


- UP\_INTRONS\_BOTH vs CS: 0.0376982
  - mean: -6.96787 < -6.19464, median: -7.11056 < -6.26872
- $\bullet$  UP\_INTRONS\_TAF2 vs CS : 4.3789e-05
  - mean: -6.69661 < -6.19464, median: -6.7967 < -6.26872
- $\bullet$  UP\_INTRONS\_TAF2dIDR vs CS : 0.00272766
  - mean: -6.67917 < -6.19464 , median: -6.56323 < -6.26872
- $\bullet$  DOWN\_INTRONS\_TAF2 vs CS : 0.00750668
  - mean: -6.59389 < -6.19464, median: -6.71265 < -6.26872
- DOWN\_INTRONS\_TAF2dIDR vs CR: 0.0152928
  - mean: -6.54564 > -7.07336, median: -6.62001 > -7.15474
- DOWN\_INTRONS\_TAF2dIDR vs AS\_NC: 0.0298007
  - mean: -6.54564 > -6.83588, median: -6.62001 > -6.8734
- $\bullet$  DOWN\_INTRONS\_TAF2dIDR vs CS : 0.0118555
- mean: -6.54564 < -6.19464, median: -6.62001 < -6.26872
- CR vs CS: 1.95145e-06
  - mean: -7.07336 < -6.19464, median: -7.15474 < -6.26872
- AS\_NC vs CS: 6.28079e-34
- mean: -6.83588 < -6.19464 , median: -6.8734 < -6.26872

### 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\_BOTH vs CS : 0.0458382 mean: 0.538095 > 0.461939 , median: 0.55 > 0.433333
- UP\_INTRONS\_TAF2 vs CS : 3.61503e-13 mean: 0.581362 > 0.461939, median: 0.633333 > 0.433333
- UP\_INTRONS\_TAF2dIDR vs CS : 2.56384e-12 mean: 0.591556 > 0.461939, median: 0.6 > 0.433333
- DOWN\_INTRONS\_BOTH vs CS : 7.67674e-06 mean: 0.584375 > 0.461939 , median: 0.6 > 0.433333
- DOWN\_INTRONS\_TAF2 vs AS\_NC : 0.0164671 mean: 0.552688 < 0.594766 , median: 0.566667 < 0.6
- DOWN\_INTRONS\_TAF2 vs CS : 4.23375e-06 mean: 0.552688 > 0.461939, median: 0.566667 > 0.433333
- DOWN\_INTRONS\_TAF2dIDR vs CS : 2.25568e-10 mean: 0.577451 > 0.461939 , median: 0.583333 > 0.433333
- CR vs CS: 2.47e-07

mean: 0.57551 > 0.461939, median: 0.6 > 0.433333

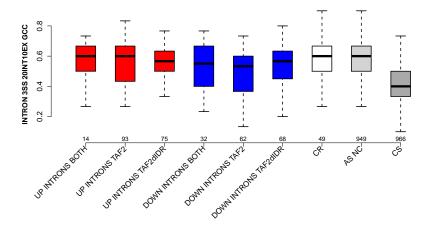
 $\bullet$  AS\_NC vs CS : 6.04821e-82

mean: 0.594766 > 0.461939, median: 0.6 > 0.433333

### 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



- UP\_INTRONS\_BOTH vs CS : 0.00069779 mean: 0.561905 > 0.418288, median: 0.6 > 0.4
- UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2 : 0.00082334 mean: 0.569534 > 0.486022 , median: 0.6 > 0.533333
- UP\_INTRONS\_TAF2 vs CS : 4.81777e-18 mean: 0.569534 > 0.418288 , median: 0.6 > 0.4
- UP\_INTRONS\_TAF2dIDR vs DOWN\_INTRONS\_TAF2 : 0.0216271 mean: 0.548444 > 0.486022 , median: 0.566667 > 0.533333
- UP\_INTRONS\_TAF2dIDR vs CS : 2.94277e-14 mean: 0.548444 > 0.418288, median: 0.566667 > 0.4
- DOWN\_INTRONS\_BOTH vs CS : 0.000104702 mean: 0.520833 > 0.418288, median: 0.55 > 0.4
- DOWN\_INTRONS\_TAF2 vs CR : 0.0090371 mean: 0.486022 < 0.565306, median: 0.533333 < 0.6
- DOWN\_INTRONS\_TAF2 vs AS\_NC : 2.76216e-05 mean: 0.486022 < 0.568599 , median: 0.533333 < 0.6
- DOWN\_INTRONS\_TAF2 vs CS : 0.000132589 mean: 0.486022 > 0.418288, median: 0.533333 > 0.4

 $\bullet$  DOWN\_INTRONS\_TAF2dIDR vs CS : 1.32761e-11

mean: 0.539216 > 0.418288, median: 0.566667 > 0.4

• CR vs CS: 1.72611e-10

mean: 0.565306 > 0.418288, median: 0.6 > 0.4

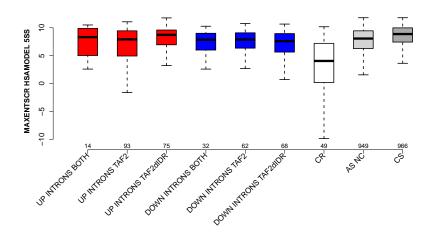
 $\bullet$  AS\_NC vs CS : 2.19029e-111

mean: 0.568599 > 0.418288, median: 0.6 > 0.4

## 6.14 MAXENTSCR HSAMODEL 5SS

Back to: Overview | ToC

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



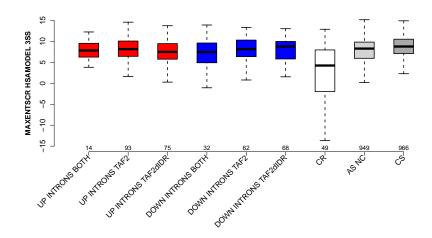
- UP\_INTRONS\_BOTH vs CR : 0.000516612 mean: 7.7993 > 2.4767, median: 8.335 > 4.05
- $\bullet$  UP\_INTRONS\_TAF2 vs UP\_INTRONS\_TAF2dIDR : 0.0191793 mean: 7.169 < 8.0565 , median: 7.93 < 8.73
- UP\_INTRONS\_TAF2 vs CR : 7.1763e-07 mean: 7.169 > 2.4767, median: 7.93 > 4.05
- UP\_INTRONS\_TAF2 vs CS : 5.07951e-06 mean: 7.169 < 8.4679, median: 7.93 < 8.88
- UP\_INTRONS\_TAF2dIDR vs DOWN\_INTRONS\_BOTH : 0.0352035 mean: 8.0565 > 6.7169 , median: 8.73 > 7.85
- UP\_INTRONS\_TAF2dIDR vs DOWN\_INTRONS\_TAF2 : 0.0418743 mean: 8.0565 > 7.4806, median: 8.73 > 7.895
- UP\_INTRONS\_TAF2dIDR vs DOWN\_INTRONS\_TAF2dIDR : 0.00544883 mean: 8.0565 > 6.9797 , median: 8.73 > 7.6
- UP\_INTRONS\_TAF2dIDR vs CR : 4.4256e-10 mean: 8.0565 > 2.4767, median: 8.73 > 4.05
- UP\_INTRONS\_TAF2dIDR vs AS\_NC : 0.0280021 mean: 8.0565 > 7.2152 , median: 8.73 > 8.07
- DOWN\_INTRONS\_BOTH vs CR : 0.00028583 mean: 6.7169 > 2.4767, median: 7.85 > 4.05

- DOWN\_INTRONS\_BOTH vs CS : 0.0011847 mean: 6.7169 < 8.4679, median: 7.85 < 8.88
- DOWN\_INTRONS\_TAF2 vs CR : 5.89606e-07 mean: 7.4806 > 2.4767, median: 7.895 > 4.05
- DOWN\_INTRONS\_TAF2 vs CS : 0.000212904 mean: 7.4806 < 8.4679, median: 7.895 < 8.88
- DOWN\_INTRONS\_TAF2dIDR vs CR : 4.71156e-06 mean: 6.9797 > 2.4767, median: 7.6 > 4.05
- DOWN\_INTRONS\_TAF2dIDR vs CS : 1.46921e-06 mean: 6.9797 < 8.4679, median: 7.6 < 8.88
- CR vs AS\_NC : 1.19476e-10 mean: 2.4767 < 7.2152, median: 4.05 < 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



- UP\_INTRONS\_BOTH vs CR : 0.01989 mean: 7.1043 > 1.2061, median: 7.84 > 4.24
- UP\_INTRONS\_TAF2 vs CR : 9.76412e-07 mean: 7.9854 > 1.2061, median: 8.16 > 4.24
- UP\_INTRONS\_TAF2 vs CS : 0.0316568 mean: 7.9854 < 8.6681, median: 8.16 < 8.775
- UP\_INTRONS\_TAF2dIDR vs CR : 7.38232e-05 mean: 7.2853 > 1.2061 , median: 7.49 > 4.24
- UP\_INTRONS\_TAF2dIDR vs CS : 0.00225371 mean: 7.2853 < 8.6681, median: 7.49 < 8.775
- DOWN\_INTRONS\_BOTH vs CR : 0.00230393 mean: 7.0888 > 1.2061, median: 7.46 > 4.24
- DOWN\_INTRONS\_BOTH vs CS : 0.00739955 mean: 7.0888 < 8.6681, median: 7.46 < 8.775
- DOWN\_INTRONS\_TAF2 vs CR : 7.86363e-06 mean: 7.9869 > 1.2061, median: 8.145 > 4.24
- DOWN\_INTRONS\_TAF2dIDR vs CR : 1.22706e-05 mean: 7.7671 > 1.2061, median: 8.79 > 4.24
- CR vs AS\_NC : 3.03037e-08 mean: 1.2061 < 7.6425, median: 4.24 < 8.28

 $\bullet$  CR vs CS: 7.80899e-12

mean: 1.2061 < 8.6681, median: 4.24 < 8.775

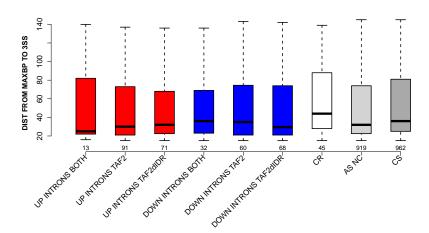
 $\bullet$  AS\_NC vs CS : 1.42038e-09

mean: 7.6425 < 8.6681, median: 8.28 < 8.775

## 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: 0.0339063

mean: 50.7363 < 60.6889, median: 30 < 44 • UP\_INTRONS\_TAF2dIDR vs CR : 0.0257344

• UP\_INTRONS\_TAF2GIDR VS CR: 0.0257344 mean: 47.2254 < 60.6889, median: 32 < 44

• DOWN\_INTRONS\_TAF2dIDR vs CR : 0.0364785 mean: 50.4265 < 60.6889, median: 29.5 < 44

• CR vs AS\_NC : 0.0172338

mean: 60.6889 > 50.5473, median: 44 > 32

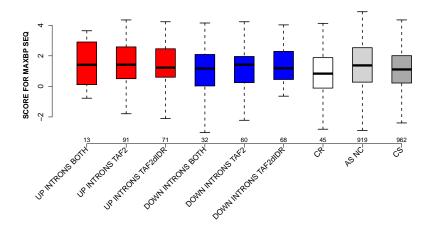
 $\bullet$  AS\_NC vs CS : 0.000701499

mean: 50.5473 < 54.1944, median: 32 < 36

## 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 : 0.00691401 mean: 1.5302 > 0.727067 , median: 1.4212 > 0.834817

• UP\_INTRONS\_TAF2 vs CS : 0.0141454 mean: 1.5302 > 1.114, median: 1.4212 > 1.1088

• UP\_INTRONS\_TAF2dIDR vs CR : 0.0103535 mean: 1.4807 > 0.727067, median: 1.2247 > 0.834817

• UP\_INTRONS\_TAF2dIDR vs CS : 0.0466904 mean: 1.4807 > 1.114, median: 1.2247 > 1.1088

• DOWN\_INTRONS\_TAF2dIDR vs CR : 0.0223441 mean: 1.3981 > 0.727067, median: 1.1838 > 0.834817

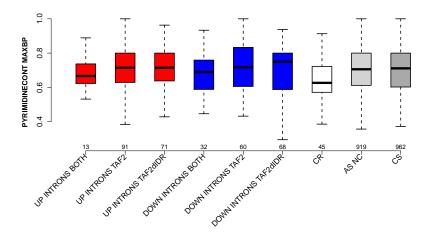
 $\bullet$  CR vs AS\_NC : 0.00895556 mean: 0.727067 < 1.3493 , median: 0.834817 < 1.3728

• AS\_NC vs CS : 0.000284643 mean: 1.3493 > 1.114, median: 1.3728 > 1.1088

## 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:

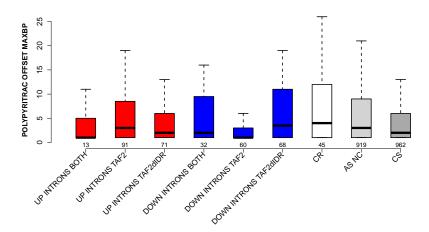
- UP\_INTRONS\_TAF2 vs CR : 0.00183477 mean: 0.713655 > 0.640034 , median: 0.714286 > 0.626506
- UP\_INTRONS\_TAF2dIDR vs CR : 0.00402944 mean: 0.708461 > 0.640034, median: 0.714286 > 0.626506
- DOWN\_INTRONS\_TAF2 vs CR : 0.00967933 mean: 0.717186 > 0.640034 , median: 0.717143 > 0.626506
- DOWN\_INTRONS\_TAF2dIDR vs CR : 0.0194035 mean: 0.693838 > 0.640034 , median: 0.749756 > 0.626506
- CR vs AS\_NC : 0.00255973 mean: 0.640034 < 0.702141 , median: 0.626506 < 0.705882
- CR vs CS: 0.00178398

mean: 0.640034 < 0.706294, median: 0.626506 < 0.711111

## 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:

 $\bullet$  UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2 : 0.00128512

mean: 7.5055 > 3.7, median: 3 > 1

• UP\_INTRONS\_TAF2 vs CS: 0.00968863

mean: 7.5055 > 4.0541, median: 3 > 2

 $\bullet$  UP\_INTRONS\_TAF2dIDR vs CR : 0.02887

mean: 4.8592 < 8.0667, median: 2 < 4

• DOWN\_INTRONS\_BOTH vs DOWN\_INTRONS\_TAF2: 0.0408769

mean: 10.0625 > 3.7, median: 2 > 1

 $\bullet$  DOWN\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2dIDR: 0.00709632

mean: 3.7 < 9.7059, median: 1 < 3.5

• DOWN\_INTRONS\_TAF2 vs CR : 0.000308973

mean: 3.7 < 8.0667, median: 1 < 4

 $\bullet$  DOWN\_INTRONS\_TAF2 vs AS\_NC: 0.000148538

mean: 3.7 < 6.445, median: 1 < 3

 $\bullet$  DOWN\_INTRONS\_TAF2 vs CS : 0.0326139

mean: 3.7 < 4.0541, median: 1 < 2

• DOWN\_INTRONS\_TAF2dIDR vs CS: 0.0384149

mean: 9.7059 > 4.0541, median: 3.5 > 2

 $\bullet$  CR vs CS : 0.0013561

mean: 8.0667 > 4.0541, median: 4 > 2

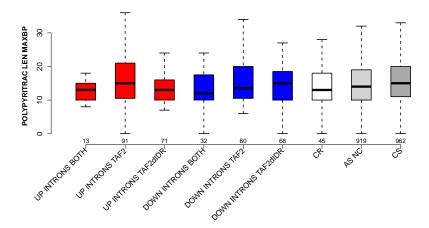
 $\bullet$  AS\_NC vs CS : 7.96057e-09

mean: 6.445 > 4.0541 , median: 3 > 2

# 6.20 POLYPYRITRAC LEN MAXBP

Back to: Overview | ToC

Meaning: Polypyrimidine track length for best BP



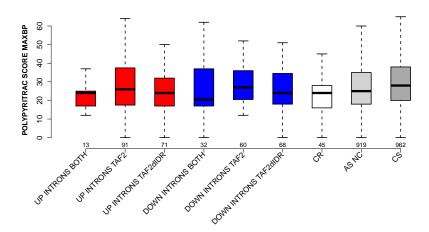
Significant results from Mann-Whitney U test:

• UP\_INTRONS\_TAF2dIDR vs CS : 0.0388667 mean: 14.7606 < 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\_BOTH vs CS : 0.0218007 mean: 20.3077 < 31.1403, median: 24 < 28

• UP\_INTRONS\_TAF2dIDR vs CS : 0.00864057 mean: 27.8451 < 31.1403, median: 24 < 28

• DOWN\_INTRONS\_BOTH vs CS : 0.009779 mean: 24.75 < 31.1403, median: 20.5 < 28

• DOWN\_INTRONS\_TAF2dIDR vs CS : 0.0365751 mean: 27.7647 < 31.1403, median: 24 < 28

 $\bullet$  CR vs CS : 0.00935101

mean: 28.0222 < 31.1403, median: 24 < 28

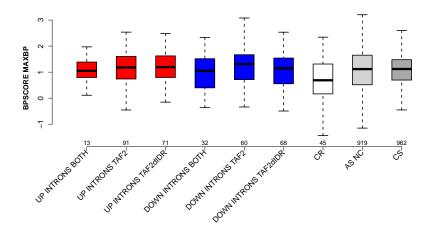
 $\bullet$  AS\_NC vs CS : 4.43541e-06

mean: 28.2111 < 31.1403, median: 25 < 28

## 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 : 0.0140561 mean: 1.0178 > 0.643616 , median: 1.1786 > 0.687251

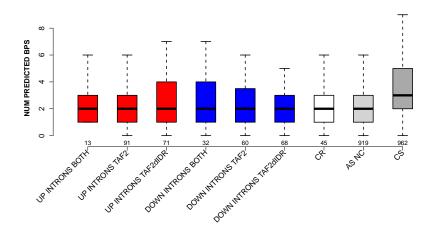
• UP\_INTRONS\_TAF2dIDR vs CR : 0.0052182 mean: 1.1622 > 0.643616, median: 1.1929 > 0.687251

• DOWN\_INTRONS\_TAF2 vs CR : 0.00442906 mean: 1.119 > 0.643616, median: 1.311 > 0.687251

## 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 AS\_NC : 0.0436162 mean: 2.4835 > 2.1132, median: 2 = 2
- UP\_INTRONS\_TAF2 vs CS : 3.25858e-06 mean: 2.4835 < 3.4283, median: 2 < 3
- UP\_INTRONS\_TAF2dIDR vs AS\_NC : 0.00318875 mean: 2.7746 > 2.1132, median: 2 = 2

- DOWN\_INTRONS\_TAF2dIDR vs CS : 0.000252504 mean: 2.4853 < 3.4283, median: 2 < 3
- CR vs CS : 0.000223094

mean: 2.4 < 3.4283, median: 2 < 3

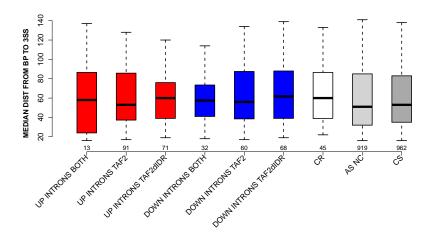
• AS\_NC vs CS: 4.30433e-50

mean: 2.1132 < 3.4283, median: 2 < 3

# 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



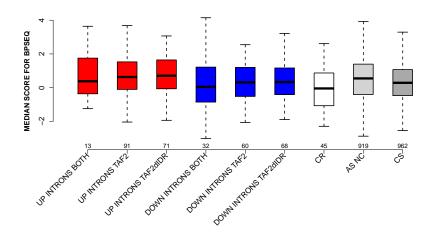
Significant results from Mann-Whitney U test:

 $\bullet$  DOWN\_INTRONS\_TAF2dIDR vs AS\_NC : 0.0423717 mean: 67.8676 > 60.3847 , median: 61.75 > 51

## 6.25 MEDIAN SCORE FOR BPSEQ

Back to: Overview | ToC

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

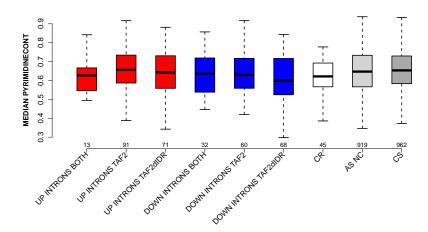


- UP\_INTRONS\_TAF2 vs CR : 0.00873298 mean: 0.670393 > 0.0265635, median: 0.630467 > -0.0489897
- UP\_INTRONS\_TAF2 vs CS : 0.0048302 mean: 0.670393 > 0.29138, median: 0.630467 > 0.286001
- UP\_INTRONS\_TAF2dIDR vs DOWN\_INTRONS\_BOTH : 0.0483799 mean: 0.759644 > 0.112309 , median: 0.704061 > 0.0425939
- UP\_INTRONS\_TAF2dIDR vs DOWN\_INTRONS\_TAF2 : 0.0343656 mean: 0.759644 > 0.208103, median: 0.704061 > 0.314884
- UP\_INTRONS\_TAF2dIDR vs CR : 0.00257647 mean: 0.759644 > 0.0265635, median: 0.704061 > -0.0489897
- UP\_INTRONS\_TAF2dIDR vs CS : 0.00122617 mean: 0.759644 > 0.29138, median: 0.704061 > 0.286001
- $\bullet$  CR vs AS\_NC : 0.00855432 mean: 0.0265635 < 0.55621 , median: -0.0489897 < 0.546263
- AS\_NC vs CS : 4.30369e-05 mean: 0.55621 > 0.29138 , median: 0.546263 > 0.286001

## 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:

• UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2dIDR : 0.0423851 mean: 0.654749 > 0.615093 , median: 0.65625 > 0.598246

 $\bullet$  DOWN\_INTRONS\_TAF2dIDR vs AS\_NC : 0.0323382 mean: 0.615093 < 0.64973 , median: 0.598246 < 0.647059

• DOWN\_INTRONS\_TAF2dIDR vs CS : 0.00515946 mean: 0.615093 < 0.658743 , median: 0.598246 < 0.653454

 $\bullet$  CR vs AS\_NC : 0.0432779 mean: 0.608188 < 0.64973 , median: 0.621622 < 0.647059

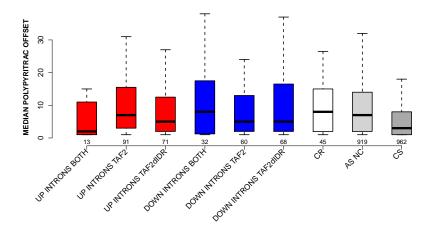
 $\bullet \ \mathtt{CR} \ \mathtt{vs} \ \mathtt{CS} : 0.0119525$ 

mean: 0.608188 < 0.658743, median: 0.621622 < 0.653454

## 6.27 MEDIAN POLYPYRITRAC OFFSET

Back to: Overview | ToC

Meaning: like POLYPYRITRAC OFFSET MAXBP but median over top-3 predicted  $\operatorname{BPs}$ 



Significant results from Mann-Whitney U test:

- UP\_INTRONS\_TAF2 vs CS : 1.12498e-05 mean: 13.2692 > 6.2386, median: 7 > 3
- UP\_INTRONS\_TAF2dIDR vs CS : 0.00746084 mean: 10.9789 > 6.2386, median: 5 > 3
- DOWN\_INTRONS\_BOTH vs CS : 0.0441819 mean: 14.8594 > 6.2386, median: 8 > 3
- DOWN\_INTRONS\_TAF2 vs CS : 0.049585 mean: 10.475 > 6.2386, median: 5 > 3
- DOWN\_INTRONS\_TAF2dIDR vs CS : 0.0044505 mean: 14.0588 > 6.2386, median: 5 > 3
- $\bullet$  CR vs CS : 0.0002235

mean: 11.7667 > 6.2386, median: 8 > 3

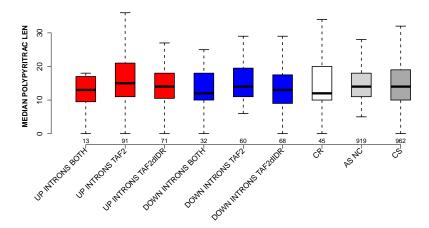
 $\bullet$  AS\_NC vs CS : 1.08241e-22

mean: 11.7198 > 6.2386, median: 7 > 3

# 6.28 MEDIAN POLYPYRITRAC LEN

Back to: Overview | ToC

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



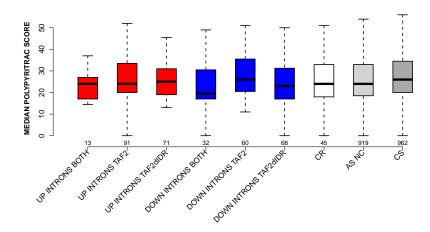
Significant results from Mann-Whitney U test:

• none

## 6.29 MEDIAN POLYPYRITRAC SCORE

Back to: Overview | ToC

Meaning: like POLYPYRITRAC SCORE MAXBP but median over top-3 predicted  $\operatorname{BPs}$ 

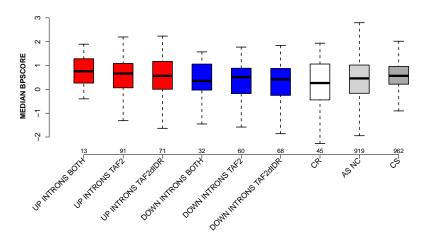


- UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_BOTH: 0.0443538
  - mean: 27.7747 > 22.6094, median: 24 > 19.5
- DOWN\_INTRONS\_BOTH vs DOWN\_INTRONS\_TAF2: 0.0141599
  - mean: 22.6094 < 33.9083, median: 19.5 < 26
- $\bullet$  DOWN\_INTRONS\_BOTH vs CS : 0.0035973
  - mean: 22.6094 < 29.2968, median: 19.5 < 26
- $\bullet$  DOWN\_INTRONS\_TAF2dIDR vs CS : 0.0139816
  - mean: 25.3235 < 29.2968, median: 23 < 26
- $\bullet$  AS\_NC vs CS : 0.000237225
  - mean: 27.2514 < 29.2968, median: 24 < 26

## 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:

 $\bullet$  DOWN\_INTRONS\_TAF2dIDR vs CS : 0.0491692

mean: 0.0136546 < 0.523785, median: 0.415061 < 0.565722

 $\bullet$  CR vs CS : 0.00548657

mean: 0.0460514 < 0.523785, median: 0.264176 < 0.565722

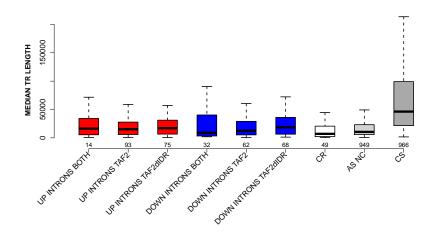
 $\bullet$  AS\_NC vs CS : 0.000316957

mean: 0.264585 < 0.523785, median: 0.45818 < 0.565722

#### 6.31 MEDIAN TR LENGTH

Back to: Overview | ToC

Meaning: median length of transcripts the intron occurs in



- UP\_INTRONS\_BOTH vs CS : 0.00196684 mean: 27878.75 < 75308.278, median: 16296 < 46337.5
- UP\_INTRONS\_TAF2 vs CR : 0.0209606 mean: 35082.0753 > 19738.1837, median: 15230 > 7107
- UP\_INTRONS\_TAF2 vs CS : 1.28168e-17 mean: 35082.0753 < 75308.278, median: 15230 < 46337.5
- UP\_INTRONS\_TAF2dIDR vs CR : 0.013758 mean: 35032.68 > 19738.1837, median: 17111 > 7107
- UP\_INTRONS\_TAF2dIDR vs AS\_NC : 0.0319322 mean: 35032.68 > 20284.3203, median: 17111 > 10531.5
- UP\_INTRONS\_TAF2dIDR vs CS : 3.25738e-12 mean: 35032.68 < 75308.278 , median: 17111 < 46337.5
- DOWN\_INTRONS\_BOTH vs CS : 5.26069e-07 mean: 32697.5469 < 75308.278, median: 8920 < 46337.5
- DOWN\_INTRONS\_TAF2 vs CR : 0.0469793 mean: 27221.6935 > 19738.1837, median: 12488.25 > 7107
- DOWN\_INTRONS\_TAF2 vs CS : 8.40182e-13 mean: 27221.6935 < 75308.278, median: 12488.25 < 46337.5
- DOWN\_INTRONS\_TAF2dIDR vs CR : 0.00471591 mean: 34052.6765 > 19738.1837, median: 18599.5 > 7107

• DOWN\_INTRONS\_TAF2dIDR vs AS\_NC : 0.0102413 mean: 34052.6765 > 20284.3203 , median: 18599.5 > 10531.5

 $\bullet$  DOWN\_INTRONS\_TAF2dIDR vs CS : 1.35788e-10 mean: 34052.6765 < 75308.278 , median: 18599.5 < 46337.5

 $\bullet$  CR vs AS\_NC : 0.0342503 mean: 19738.1837 < 20284.3203 , median: 7107 < 10531.5

• CR vs CS: 1.02478e-14

• CR VS CS : 1.024766-14

mean: 19738.1837 < 75308.278, median: 7107 < 46337.5

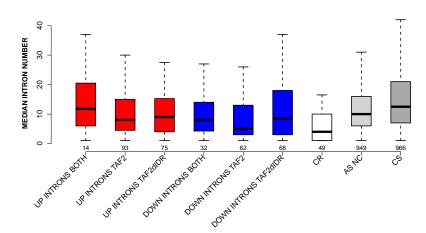
 $\bullet$  AS\_NC vs CS : 1.04971e-127

mean: 20284.3203 < 75308.278, median: 10531.5 < 46337.5

## 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\_BOTH vs CR : 0.00583283 mean: 13.7857 > 6.2857, median: 11.75 > 4
- UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2: 0.0185432

mean: 11.3065 > 8.1613 , median: 8 > 5

- UP\_INTRONS\_TAF2 vs CR : 0.00015343 mean: 11.3065 > 6.2857, median: 8 > 4
- UP\_INTRONS\_TAF2 vs CS: 7.35608e-06
  - mean: 11.3065 < 16.4752 , median: 8 < 12.5
- UP\_INTRONS\_TAF2dIDR vs CR : 0.000982872 mean: 10.8667 > 6.2857, median: 9 > 4
- UP\_INTRONS\_TAF2dIDR vs CS : 7.50743e-05 mean: 10.8667 < 16.4752, median: 9 < 12.5
- DOWN\_INTRONS\_BOTH vs CS : 0.00195441 mean: 9.8438 < 16.4752, median: 8 < 12.5
- DOWN\_INTRONS\_TAF2 vs AS\_NC : 7.48263e-06 mean: 8.1613 < 12.7339, median: 5 < 10

- DOWN\_INTRONS\_TAF2 vs CS : 3.674e-10 mean: 8.1613 < 16.4752, median: 5 < 12.5
- DOWN\_INTRONS\_TAF2dIDR vs CR : 0.00143327 mean: 11.4412 > 6.2857 , median: 8.5 > 4
- DOWN\_INTRONS\_TAF2dIDR vs CS : 0.000287274 mean: 11.4412 < 16.4752, median: 8.5 < 12.5
- $\bullet$  CR vs CS: 3.87834e-12

mean: 6.2857 < 16.4752, median: 4 < 12.5

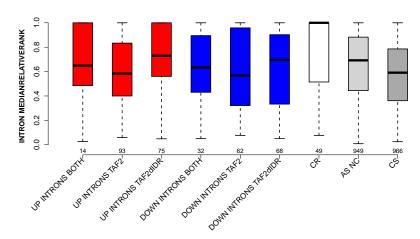
 $\bullet$  AS\_NC vs CS : 6.35515e-12

mean: 12.7339 < 16.4752, median: 10 < 12.5

### 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



- UP\_INTRONS\_TAF2 vs UP\_INTRONS\_TAF2dIDR : 0.0104936 mean: 0.610678 < 0.717277, median: 0.583333 < 0.729532
- UP\_INTRONS\_TAF2 vs CR : 0.000110072 mean: 0.610678 < 0.787237 , median: 0.583333 < 1
- UP\_INTRONS\_TAF2dIDR vs DOWN\_INTRONS\_TAF2 : 0.0438782 mean: 0.717277 > 0.601119, median: 0.729532 > 0.567506
- UP\_INTRONS\_TAF2dIDR vs CR : 0.0259357 mean: 0.717277 < 0.787237 , median: 0.729532 < 1
- UP\_INTRONS\_TAF2dIDR vs AS\_NC : 0.0352525 mean: 0.717277 > 0.649585, median: 0.729532 > 0.692105
- UP\_INTRONS\_TAF2dIDR vs CS : 9.13426e-06 mean: 0.717277 > 0.576095 , median: 0.729532 > 0.590972
- DOWN\_INTRONS\_BOTH vs CR : 0.0040002 mean: 0.618575 < 0.787237 , median: 0.633333 < 1
- DOWN\_INTRONS\_TAF2 vs CR : 0.000892887 mean: 0.601119 < 0.787237 , median: 0.567506 < 1
- DOWN\_INTRONS\_TAF2dIDR vs CR : 0.00152501 mean: 0.628382 < 0.787237 , median: 0.695685 < 1

 $\bullet$  CR vs AS\_NC :  $3.6448\mathrm{e}\text{-}05$ 

mean: 0.787237 > 0.649585, median: 1 > 0.692105

 $\bullet$  CR vs CS : 6.74798e-08

mean: 0.787237 > 0.576095, median: 1 > 0.590972

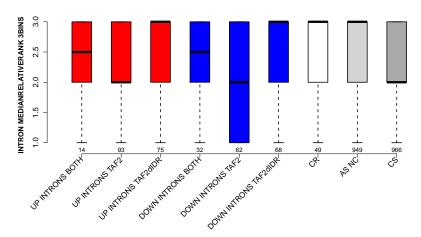
 $\bullet$  AS\_NC vs CS : 1.47703e-09

mean: 0.649585 > 0.576095, median: 0.692105 > 0.590972

### 6.34 INTRON MEDIANRELATIVERANK 3BINS

Back to: Overview | ToC

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

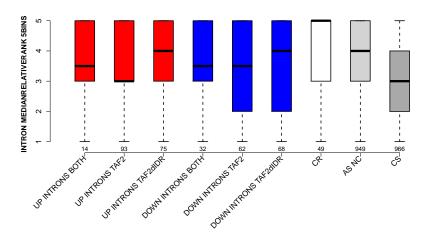


- UP\_INTRONS\_TAF2 vs UP\_INTRONS\_TAF2dIDR: 0.0168934
  - mean: 2.3333 < 2.5733, median: 2 < 3
- UP\_INTRONS\_TAF2 vs CR : 0.0297599
  - mean: 2.3333 < 2.5714, median: 2 < 3
- UP\_INTRONS\_TAF2dIDR vs DOWN\_INTRONS\_TAF2: 0.0121434
  - mean: 2.5733 > 2.2258, median: 3 > 2
- $\bullet$  UP\_INTRONS\_TAF2dIDR vs AS\_NC : 0.0447276
  - mean: 2.5733 > 2.3962, median: 3 = 3
- UP\_INTRONS\_TAF2dIDR vs CS: 2.70872e-05
  - mean: 2.5733 > 2.2039, median: 3 > 2
- DOWN\_INTRONS\_TAF2 vs CR: 0.022044
- mean: 2.2258 < 2.5714, median: 2 < 3
- $\bullet$  CR vs CS : 0.00048695
  - mean: 2.5714 > 2.2039, median: 3 > 2
- AS\_NC vs CS: 4.47311e-09
  - mean: 2.3962 > 2.2039, median: 3 > 2

### 6.35 INTRON MEDIANRELATIVERANK 5BINS

Back to: Overview | ToC

Meaning: similar to INTRON MEDIANRELATIVERANK 3BINS with 5 bins



Significant results from Mann-Whitney U test:

 $\bullet \ \mathtt{UP\_INTRONS\_TAF2} \ \mathtt{vs} \ \mathtt{UP\_INTRONS\_TAF2dIDR} : 0.0123406 \\$ 

mean: 3.4731 < 3.9467, median: 3 < 4

• UP\_INTRONS\_TAF2 vs CR : 0.000559423

mean: 3.4731 < 4.1633, median: 3 < 5

• UP\_INTRONS\_TAF2dIDR vs DOWN\_INTRONS\_TAF2: 0.0476399

mean: 3.9467 > 3.4032, median: 4 > 3.5

• UP\_INTRONS\_TAF2dIDR vs CS: 6.46813e-05

mean: 3.9467 > 3.3437, median: 4 > 3

 $\bullet$  DOWN\_INTRONS\_BOTH vs CR : 0.0204464

mean: 3.5 < 4.1633, median: 3.5 < 5

• DOWN\_INTRONS\_TAF2 vs CR: 0.00468559

mean: 3.4032 < 4.1633, median: 3.5 < 5

• DOWN\_INTRONS\_TAF2dIDR vs CR: 0.0109438

mean: 3.5588 < 4.1633, median: 4 < 5

 $\bullet$  CR vs AS\_NC : 0.00135058

mean: 4.1633 > 3.6786, median: 5 > 4

• CR vs CS: 3.21625e-06

mean: 4.1633 > 3.3437, median: 5 > 3

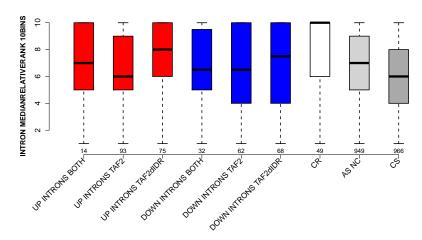
 $\bullet$  AS\_NC vs CS : 5.56003e-09

mean: 3.6786 > 3.3437, median: 4 > 3

## 6.36 INTRON MEDIANRELATIVERANK 10BINS

Back to: Overview | ToC

Meaning: similar to INTRON MEDIANRELATIVERANK 3BINS with 10 bins



- UP\_INTRONS\_TAF2 vs UP\_INTRONS\_TAF2dIDR: 0.00752563
  - mean: 6.5484 < 7.5867 , median: 6 < 8
- UP\_INTRONS\_TAF2 vs CR : 0.000109109 mean: 6.5484 < 8.1429, median: 6 < 10
- UP\_INTRONS\_TAF2dIDR vs CR: 0.03412
- mean: 7.5867 < 8.1429, median: 8 < 10
- UP\_INTRONS\_TAF2dIDR vs AS\_NC : 0.0369228 mean: 7.5867 > 6.9442, median: 8 > 7
- UP\_INTRONS\_TAF2dIDR vs CS : 1.46713e-05 mean: 7.5867 > 6.2588, median: 8 > 6
- $\bullet$  DOWN\_INTRONS\_BOTH vs CR : 0.00649095
- $\begin{array}{l} \text{mean: } 6.7188 < 8.1429 \text{ , median: } 6.5 < 10 \\ \bullet \text{ DOWN\_INTRONS\_TAF2 vs CR: } 0.00224581 \end{array}$
- DOWN\_INTRONS\_TAF2 vs CR : 0.00224581 mean: 6.5 < 8.1429, median: 6.5 < 10
- CR vs AS\_NC : 8.77334e-05 mean: 8.1429 > 6.9442, median: 10 > 7
- CR vs CS: 2.01587e-07
  - mean: 8.1429 > 6.2588, median: 10 > 6

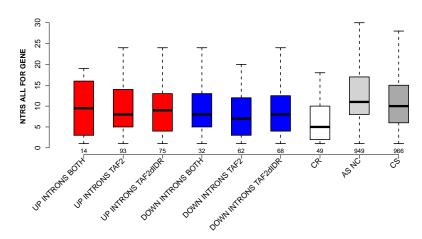
• AS\_NC vs CS : 4.90923e-09

mean: 6.9442 > 6.2588 , median: 7 > 6

## 6.37 NTRS ALL FOR GENE

Back to: Overview | ToC

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



- UP\_INTRONS\_TAF2 vs CR : 0.00249495 mean: 10.1613 > 7.0204, median: 8 > 5
- UP\_INTRONS\_TAF2 vs AS\_NC : 1.81521e-05 mean: 10.1613 < 13.1423, median: 8 < 11
- UP\_INTRONS\_TAF2 vs CS : 0.0239366 mean: 10.1613 < 11.266, median: 8 < 10
- UP\_INTRONS\_TAF2dIDR vs CR : 0.0291568 mean: 9.4667 > 7.0204, median: 9 > 5
- UP\_INTRONS\_TAF2dIDR vs AS\_NC : 1.10536e-05 mean: 9.4667 < 13.1423, median: 9 < 11
- UP\_INTRONS\_TAF2dIDR vs CS : 0.00718851 mean: 9.4667 < 11.266, median: 9 < 10
- $\bullet$  DOWN\_INTRONS\_BOTH vs AS\_NC : 0.0150269 mean: 10.25 < 13.1423 , median: 8 < 11
- DOWN\_INTRONS\_TAF2 vs AS\_NC : 6.53129e-08 mean: 7.8871 < 13.1423, median: 7 < 11
- DOWN\_INTRONS\_TAF2 vs CS : 0.000112886 mean: 7.8871 < 11.266 , median: 7 < 10

 $\bullet$  DOWN\_INTRONS\_TAF2dIDR vs AS\_NC : 0.000161545

mean: 10.3529 < 13.1423, median: 8 < 11

• DOWN\_INTRONS\_TAF2dIDR vs CS : 0.0273534

mean: 10.3529 < 11.266, median: 8 < 10

 $\bullet$  CR vs AS\_NC : 2.7049e-10

mean: 7.0204 < 13.1423, median: 5 < 11

 $\bullet$  CR vs CS : 2.70254e-07

mean: 7.0204 < 11.266, median: 5 < 10

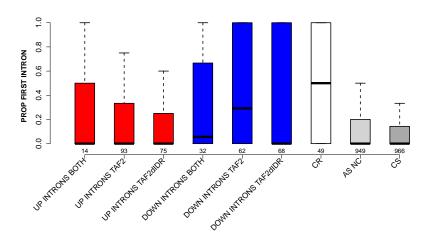
 $\bullet$  AS\_NC vs CS : 7.55967e-08

mean: 13.1423 > 11.266, median: 11 > 10

#### 6.38 PROP FIRST INTRON

Back to: Overview | ToC

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



- UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2 : 0.00685859 mean: 0.244682 < 0.418088 , median: 0 < 0.291667
- UP\_INTRONS\_TAF2 vs CR : 0.00797048 mean: 0.244682 < 0.489456 , median: 0 < 0.5
- UP\_INTRONS\_TAF2 vs CS : 0.014602 mean: 0.244682 > 0.122024, median: 0 = 0
- UP\_INTRONS\_TAF2dIDR vs DOWN\_INTRONS\_TAF2 : 0.0131798 mean: 0.244679 < 0.418088 , median: 0 < 0.291667
- UP\_INTRONS\_TAF2dIDR vs CR : 0.0193626 mean: 0.244679 < 0.489456 , median: 0 < 0.5
- UP\_INTRONS\_TAF2dIDR vs CS : 0.0162891 mean: 0.244679 > 0.122024, median: 0 = 0
- DOWN\_INTRONS\_BOTH vs CS : 0.00741715 mean: 0.299826 > 0.122024 , median: 0.0555556 > 0
- DOWN\_INTRONS\_TAF2 vs AS\_NC : 1.2273e-06 mean: 0.418088 > 0.158179 , median: 0.291667 > 0
- DOWN\_INTRONS\_TAF2 vs CS : 1.25144e-09 mean: 0.418088 > 0.122024 , median: 0.291667 > 0
- DOWN\_INTRONS\_TAF2dIDR vs CS : 0.0122724 mean: 0.308502 > 0.122024, median: 0 = 0

 $\bullet$  CR vs AS\_NC :  $4.14762\mathrm{e}\text{-}05$ 

mean: 0.489456 > 0.158179, median: 0.5 > 0

 $\bullet$  CR vs CS: 3.50239e-07

mean: 0.489456 > 0.122024, median: 0.5 > 0

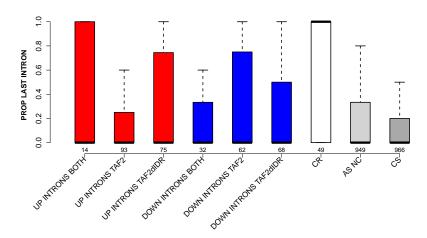
 $\bullet$  AS\_NC vs CS : 0.000628243

mean: 0.158179 > 0.122024, median: 0 = 0

#### 6.39 PROP LAST INTRON

Back to: Overview | ToC

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



- UP\_INTRONS\_BOTH vs CR: 0.0285155
- mean: 0.303571 < 0.62619, median: 0 < 1• UP\_INTRONS\_TAF2 vs CR: 7.8275e-06
- OP\_INTRONS\_TAF2 vs CR: 7.8275e-06 mean: 0.224662 < 0.62619, median: 0 < 1
- UP\_INTRONS\_TAF2dIDR vs CR : 0.000605189 mean: 0.307727 < 0.62619 , median: 0 < 1
- DOWN\_INTRONS\_BOTH vs CR : 0.000668066 mean: 0.234375 < 0.62619, median: 0 < 1
- DOWN\_INTRONS\_TAF2 vs CR : 0.000371248 mean: 0.292672 < 0.62619, median: 0 < 1
- DOWN\_INTRONS\_TAF2 vs CS : 0.0376841 mean: 0.292672 > 0.152926, median: 0 = 0
- DOWN\_INTRONS\_TAF2dIDR vs CR : 0.000213869 mean: 0.275206 < 0.62619, median: 0 < 1
- DOWN\_INTRONS\_TAF2dIDR vs CS : 0.02613 mean: 0.275206 > 0.152926, median: 0 = 0
- CR vs AS\_NC : 1.77408e-07 mean: 0.62619 > 0.237764, median: 1 > 0

 $\bullet$  CR vs CS : 6.34572e-12

mean: 0.62619 > 0.152926, median: 1 > 0

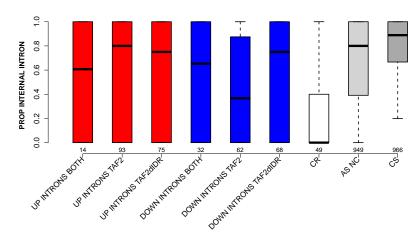
 $\bullet$  AS\_NC vs CS : 5.66807e-09

mean: 0.237764>0.152926 , median: 0=0

#### 6.40 PROP INTERNAL INTRON

Back to: Overview | ToC

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



- UP\_INTRONS\_BOTH vs CR : 0.0274617 mean: 0.517857 > 0.242857 , median: 0.607143 > 0
- UP\_INTRONS\_TAF2 vs DOWN\_INTRONS\_TAF2 : 0.00997574 mean: 0.608499 > 0.431917 , median: 0.8 > 0.366667
- UP\_INTRONS\_TAF2 vs CR : 9.31319e-06 mean: 0.608499 > 0.242857, median: 0.8 > 0
- UP\_INTRONS\_TAF2 vs CS : 0.0081457 mean: 0.608499 < 0.750345, median: 0.8 < 0.888889
- UP\_INTRONS\_TAF2dIDR vs CR : 0.000147939 mean: 0.579202 > 0.242857, median: 0.75 > 0
- UP\_INTRONS\_TAF2dIDR vs CS : 0.000770041 mean: 0.579202 < 0.750345 , median: 0.75 < 0.888889
- DOWN\_INTRONS\_BOTH vs CR : 0.00175363 mean: 0.536062 > 0.242857 , median: 0.652778 > 0
- DOWN\_INTRONS\_BOTH vs CS : 0.0039546 mean: 0.536062 < 0.750345, median: 0.652778 < 0.888889
- DOWN\_INTRONS\_TAF2 vs CR : 0.013392 mean: 0.431917 > 0.242857, median: 0.366667 > 0
- DOWN\_INTRONS\_TAF2 vs AS\_NC : 0.000260022 mean: 0.431917 < 0.647068 , median: 0.366667 < 0.8

• DOWN\_INTRONS\_TAF2 vs CS: 1.13222e-08

mean: 0.431917 < 0.750345, median: 0.366667 < 0.888889

 $\bullet$  DOWN\_INTRONS\_TAF2dIDR vs CR : 0.00018571

mean: 0.568196 > 0.242857, median: 0.75 > 0

 $\bullet$  DOWN\_INTRONS\_TAF2dIDR vs CS : 0.00140288

mean: 0.568196 < 0.750345, median: 0.75 < 0.888889

 $\bullet$  CR vs AS\_NC : 1.58787e-08

mean: 0.242857 < 0.647068, median: 0 < 0.8

 $\bullet$  CR vs CS : 1.2596e-12

mean: 0.242857 < 0.750345, median: 0 < 0.888889

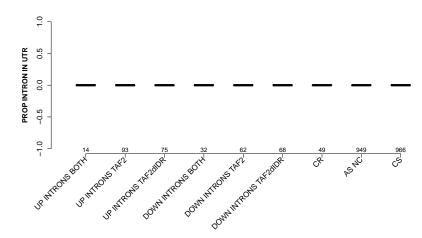
• AS\_NC vs CS: 1.08108e-10

mean: 0.647068 < 0.750345, median: 0.8 < 0.888889

## 6.41 PROP INTRON IN UTR

Back to: Overview | ToC

Meaning: NTRS WITH INTRON IN UTR / NTRS WITH INTRON



- UP\_INTRONS\_TAF2 vs CS : 0.0101564 mean: 0.0289444 > 0.0111757 , median: 0 = 0
- $\bullet$  UP\_INTRONS\_TAF2dIDR vs DOWN\_INTRONS\_TAF2 : 0.032824 mean: 0.0163889 < 0.0544652 , median: 0=0
- DOWN\_INTRONS\_TAF2 vs CS : 0.00193933 mean: 0.0544652 > 0.0111757 , median: 0 = 0
- AS\_NC vs CS : 0.00606231 mean: 0.0200644 > 0.0111757, median: 0 = 0