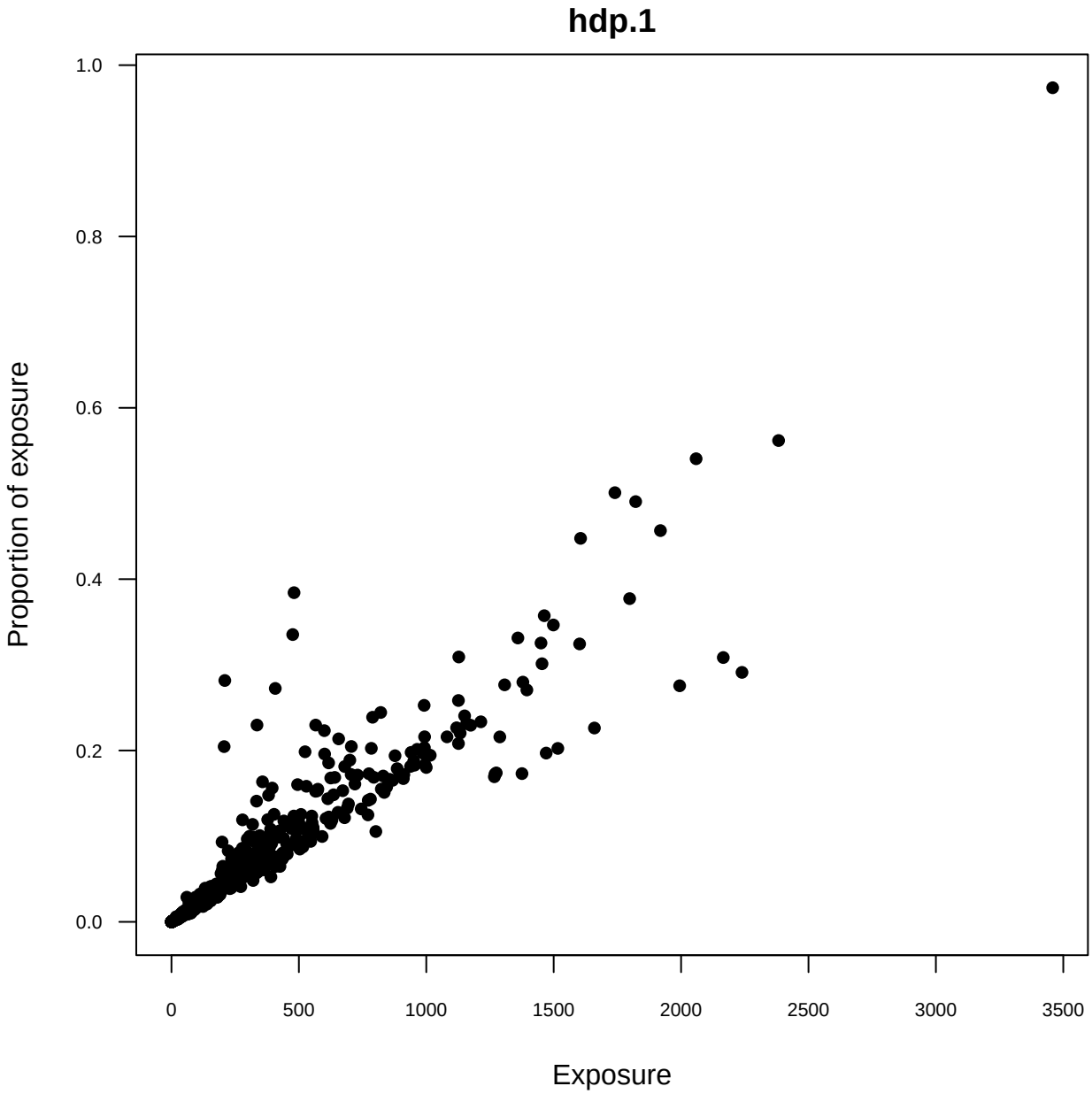
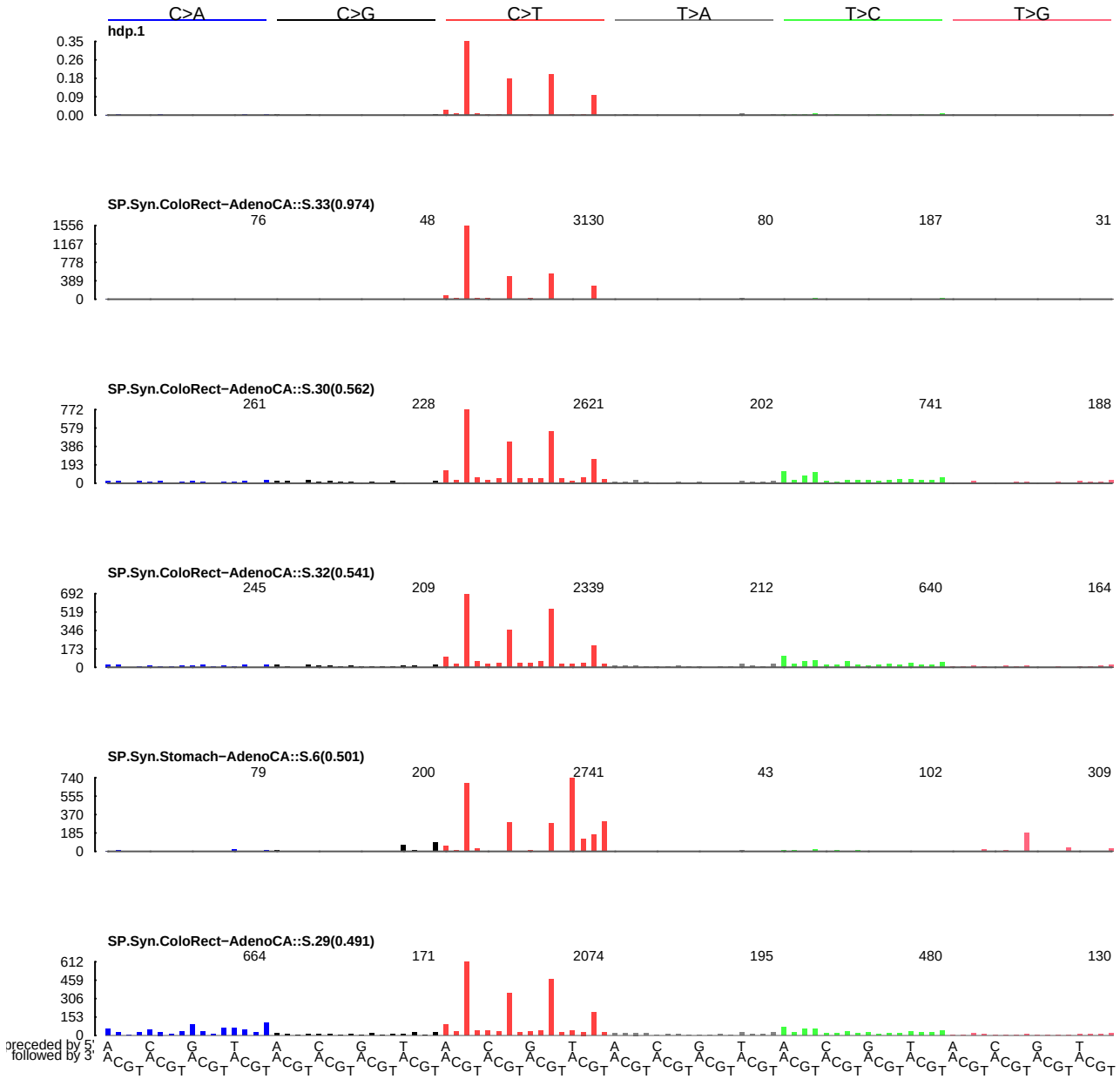
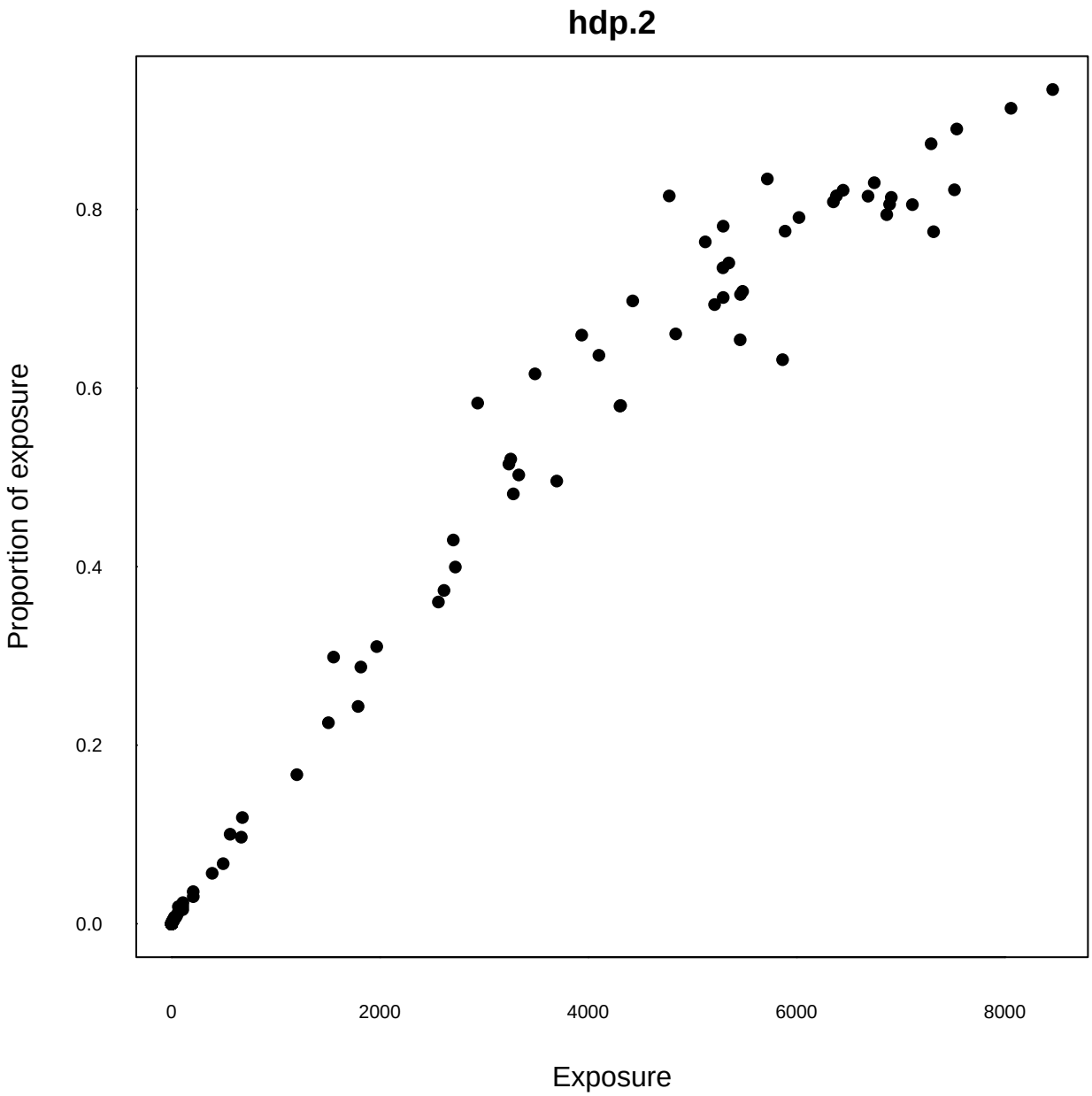
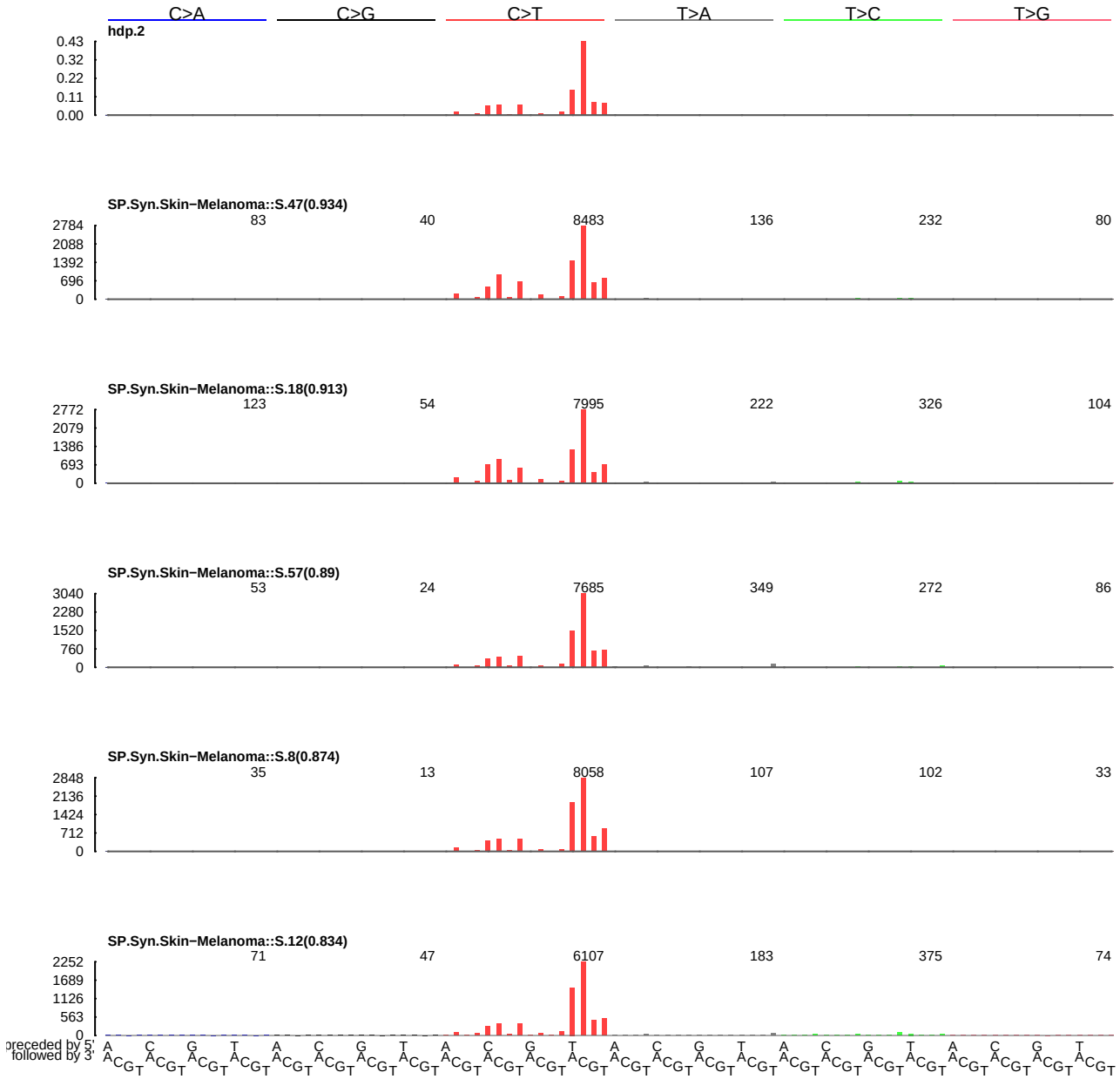
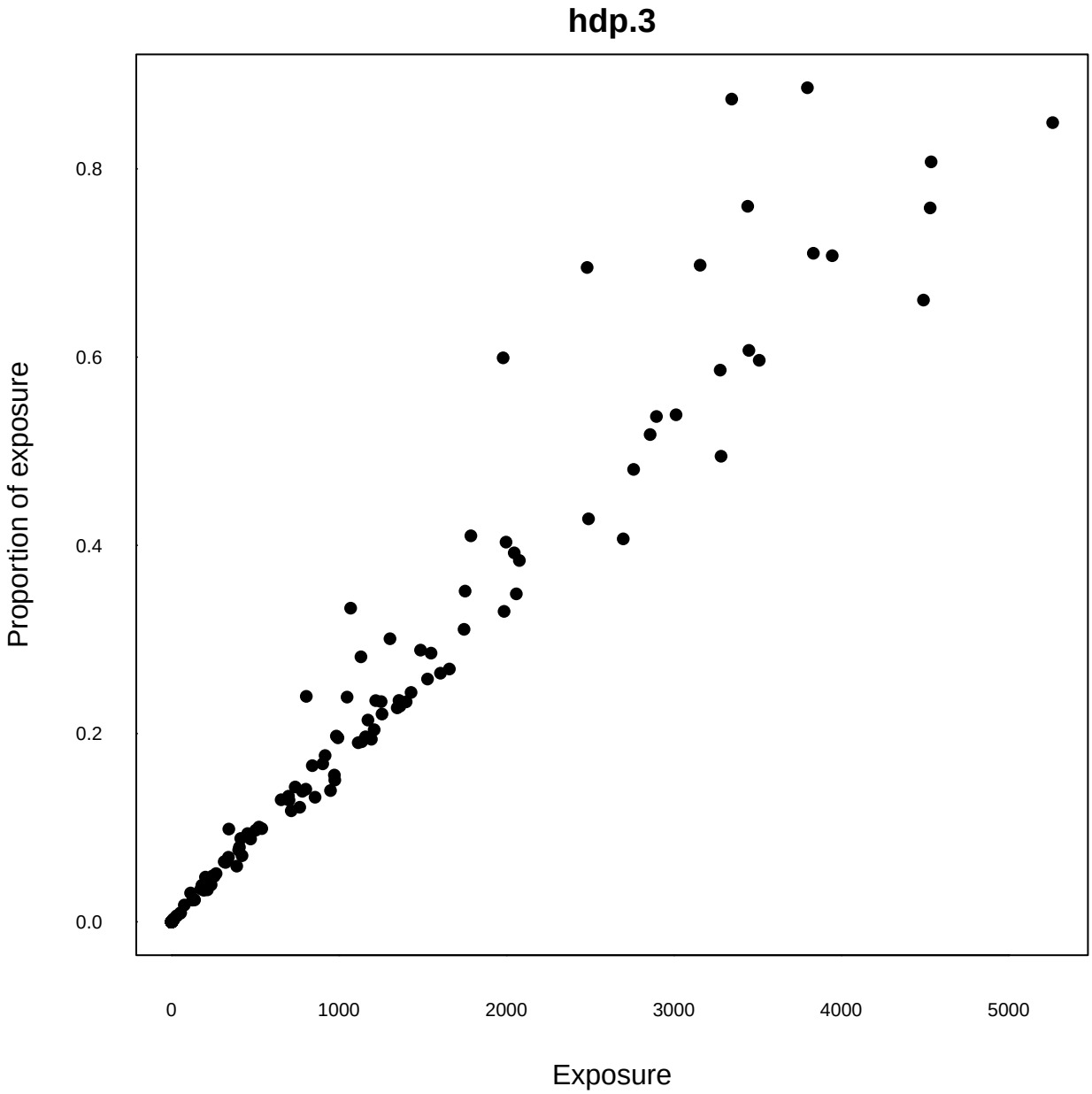
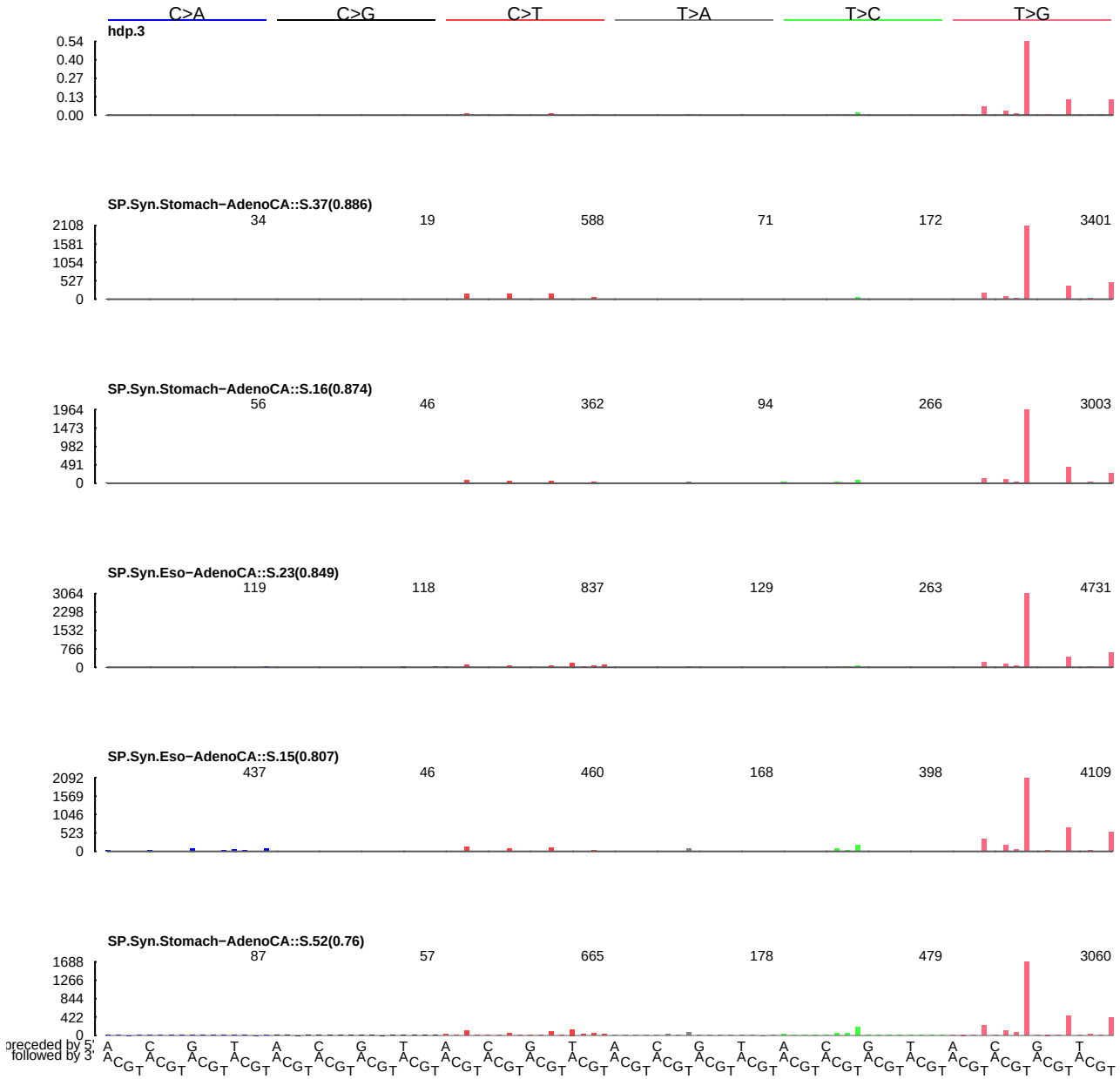

hdp.1
Proportion of exposure
1.0
0.8
0.6
0.4
0.2
0.0
0
500
1000
1500
2000
2500
3000
3500
Exposure

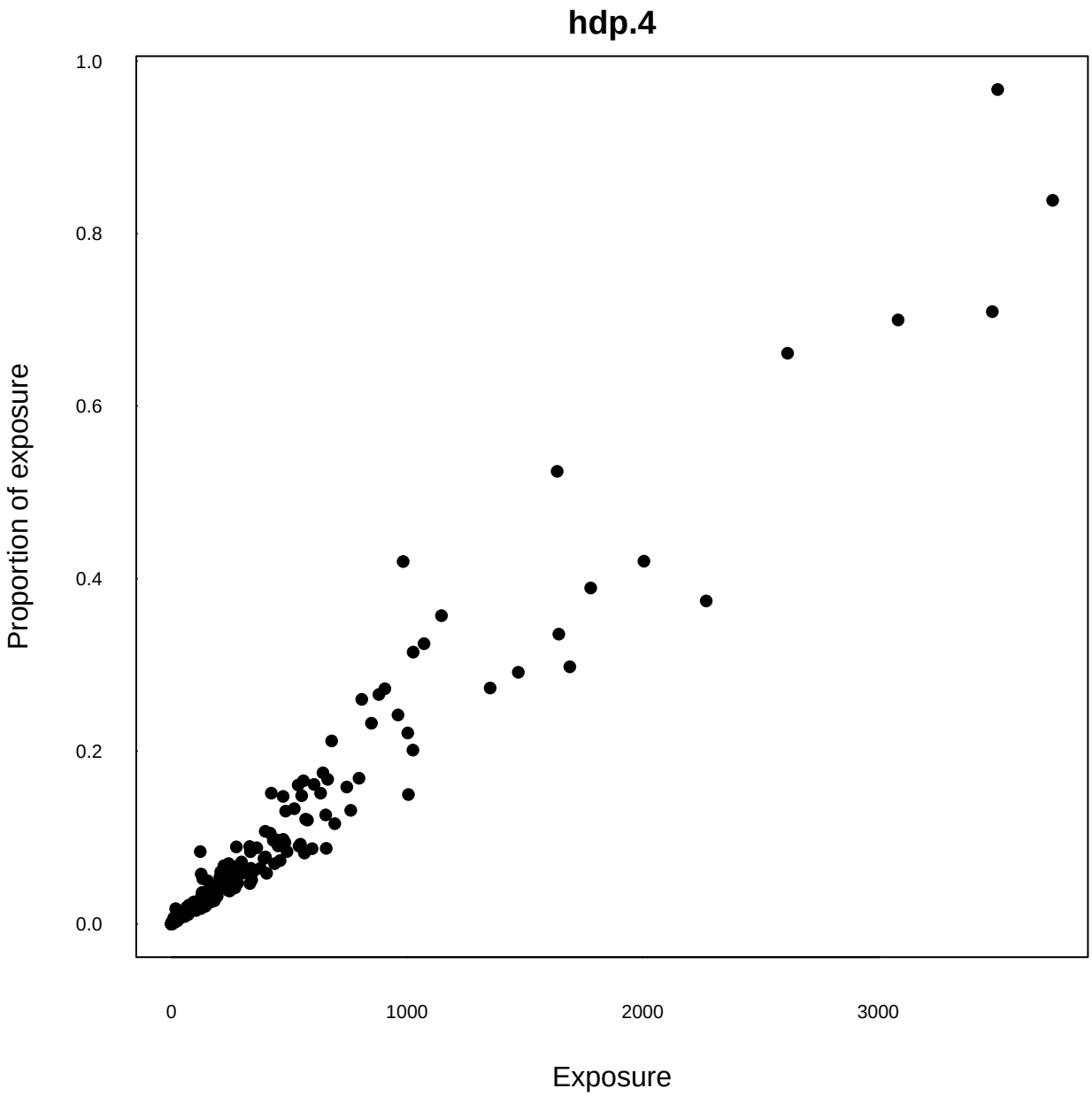

C>A
C>G
C>T
T>A
T>C
T>G
hdp.1
0.35
0.26
0.18
0.09
0.00
SP.Syn.ColoRect−AdenoCA::S.33(0.974)
76
48
3130
80
187
31
1556
1167
778
389
0
SP.Syn.ColoRect−AdenoCA::S.30(0.562)
261
228
2621
202
741
188
772
579
386
193
0
SP.Syn.ColoRect−AdenoCA::S.32(0.541)
245
209
2339
212
640
164
692
519
346
173
0
SP.Syn.Stomach−AdenoCA::S.6(0.501)
79
200
2741
43
102
309
740
555
370
185
0
SP.Syn.ColoRect−AdenoCA::S.29(0.491)
664
171
2074
195
480
130
612
459
306
153
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

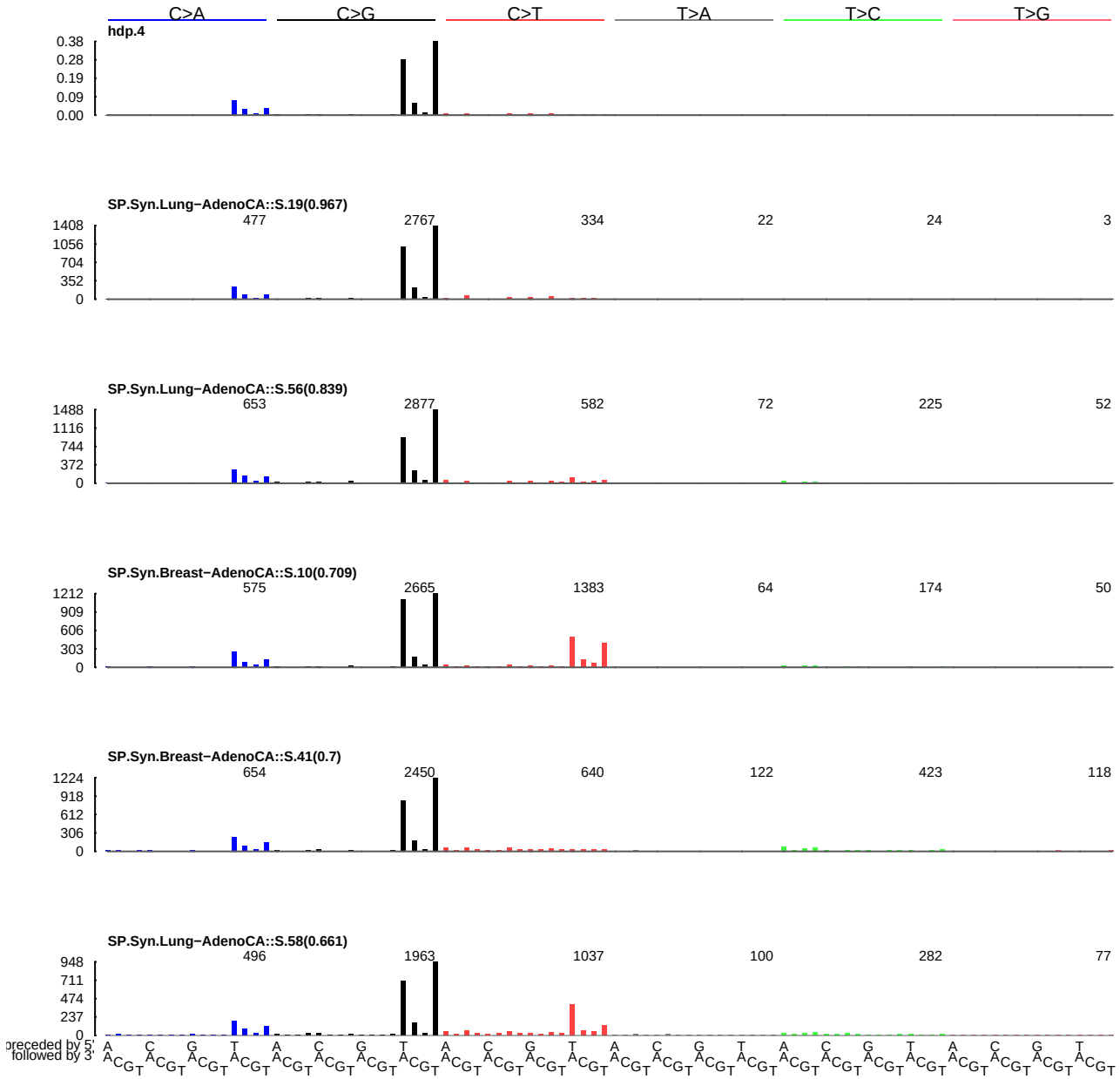

hdp.2
Proportion of exposure
0.0
0.2
0.4
0.6
0.8
0
2000
4000
6000
8000
Exposure

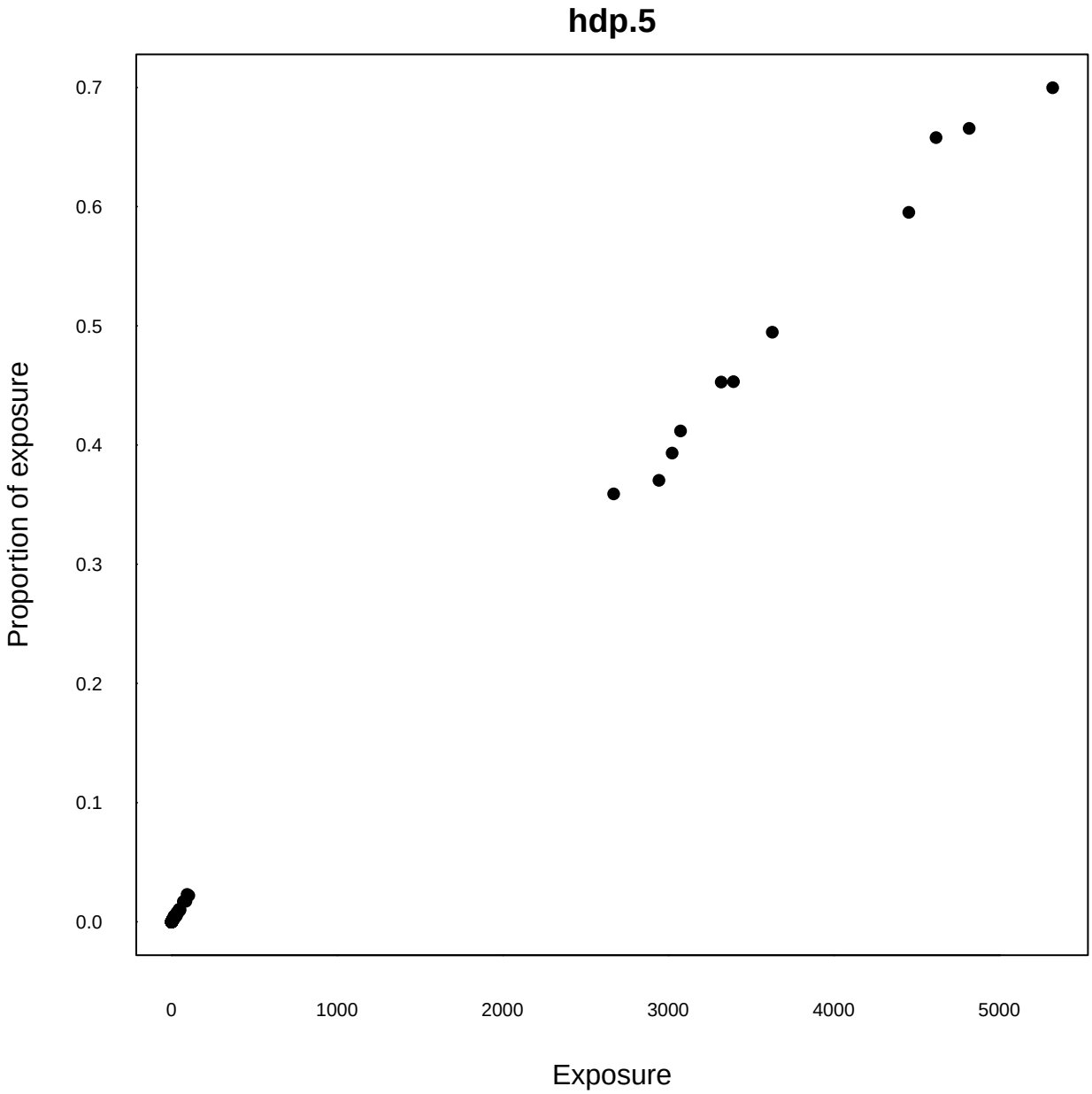

C>A
C>G
C>T
T>A
T>C
T>G
hdp.2
0.43
0.32
0.22
0.11
0.00
SP.Syn.Skin−Melanoma::S.47(0.934)
83
40
8483
136
232
80
2784
2088
1392
696
0
SP.Syn.Skin−Melanoma::S.18(0.913)
123
54
7995
222
326
104
2772
2079
1386
693
0
SP.Syn.Skin−Melanoma::S.57(0.89)
53
24
7685
349
272
86
3040
2280
1520
760
0
SP.Syn.Skin−Melanoma::S.8(0.874)
35
13
8058
107
102
33
2848
2136
1424
712
0
SP.Syn.Skin−Melanoma::S.12(0.834)
71
47
6107
183
375
74
2252
1689
1126
563
0
preceded by 5'
followed by 3'

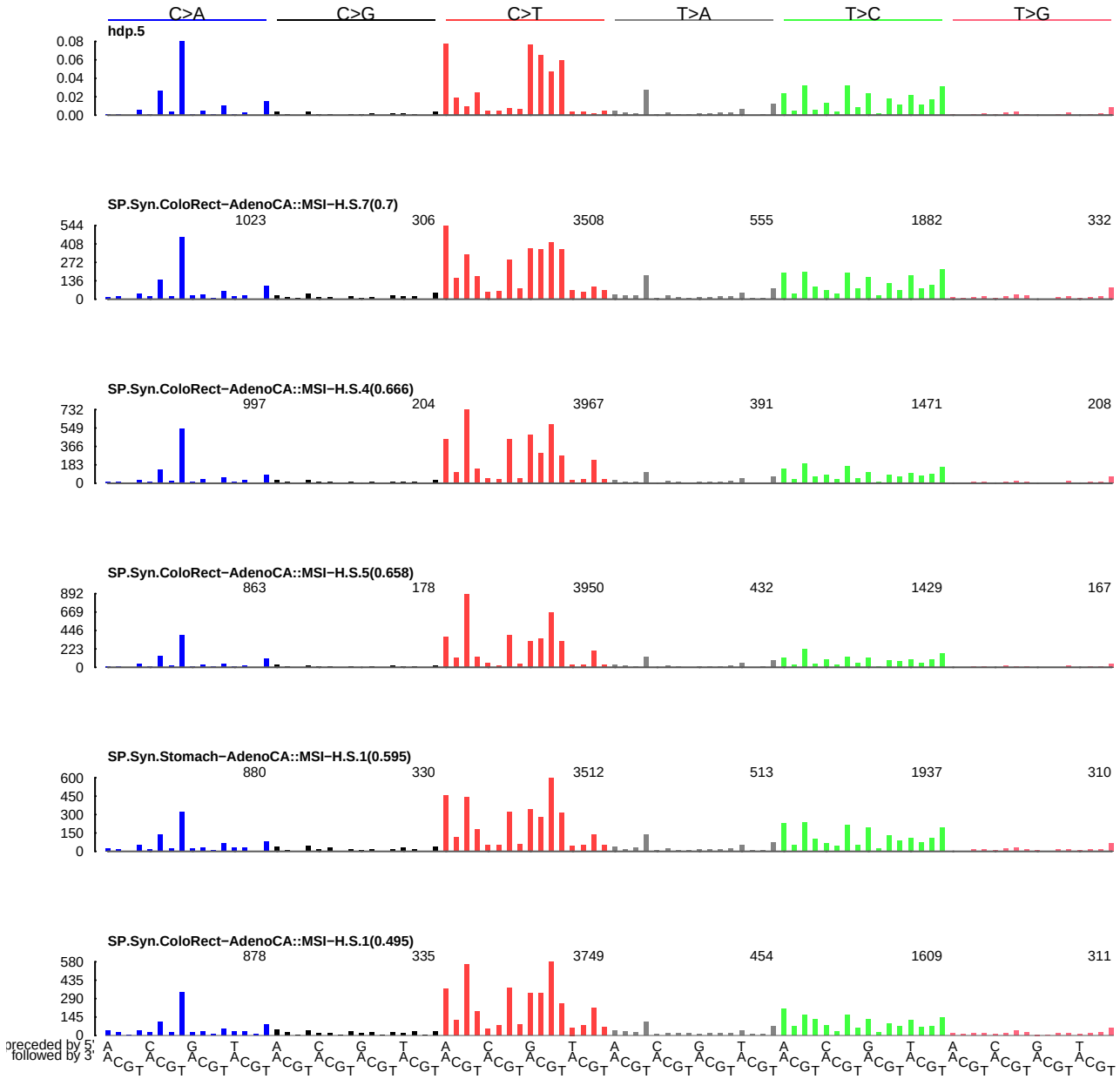

hdp.3
Proportion of exposure
0.0
0.2
0.4
0.6
0.8
0
1000
2000
3000
4000
5000
Exposure

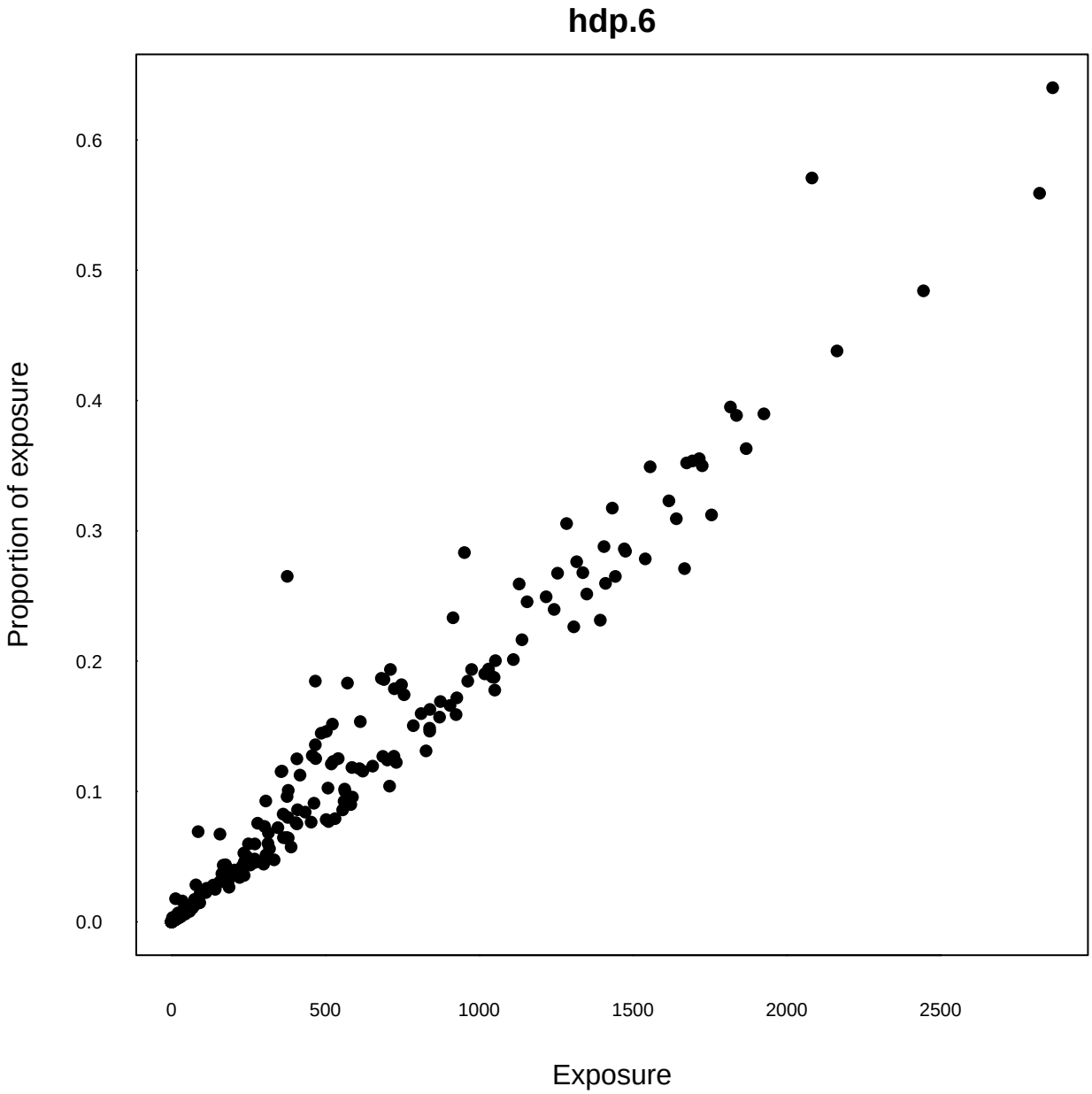

C>A
C>G
C>T
T>A
T>C
T>G
hdp.3
0.54
0.40
0.27
0.13
0.00
SP.Syn.Stomach−AdenoCA::S.37(0.886)
34
19
588
71
172
3401
2108
1581
1054
527
0
SP.Syn.Stomach−AdenoCA::S.16(0.874)
56
46
362
94
266
3003
1964
1473
982
491
0
SP.Syn.Eso−AdenoCA::S.23(0.849)
119
118
837
129
263
4731
3064
2298
1532
766
0
SP.Syn.Eso−AdenoCA::S.15(0.807)
437
46
460
168
398
4109
2092
1569
1046
523
0
SP.Syn.Stomach−AdenoCA::S.52(0.76)
87
57
665
178
479
3060
1688
1266
844
422
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

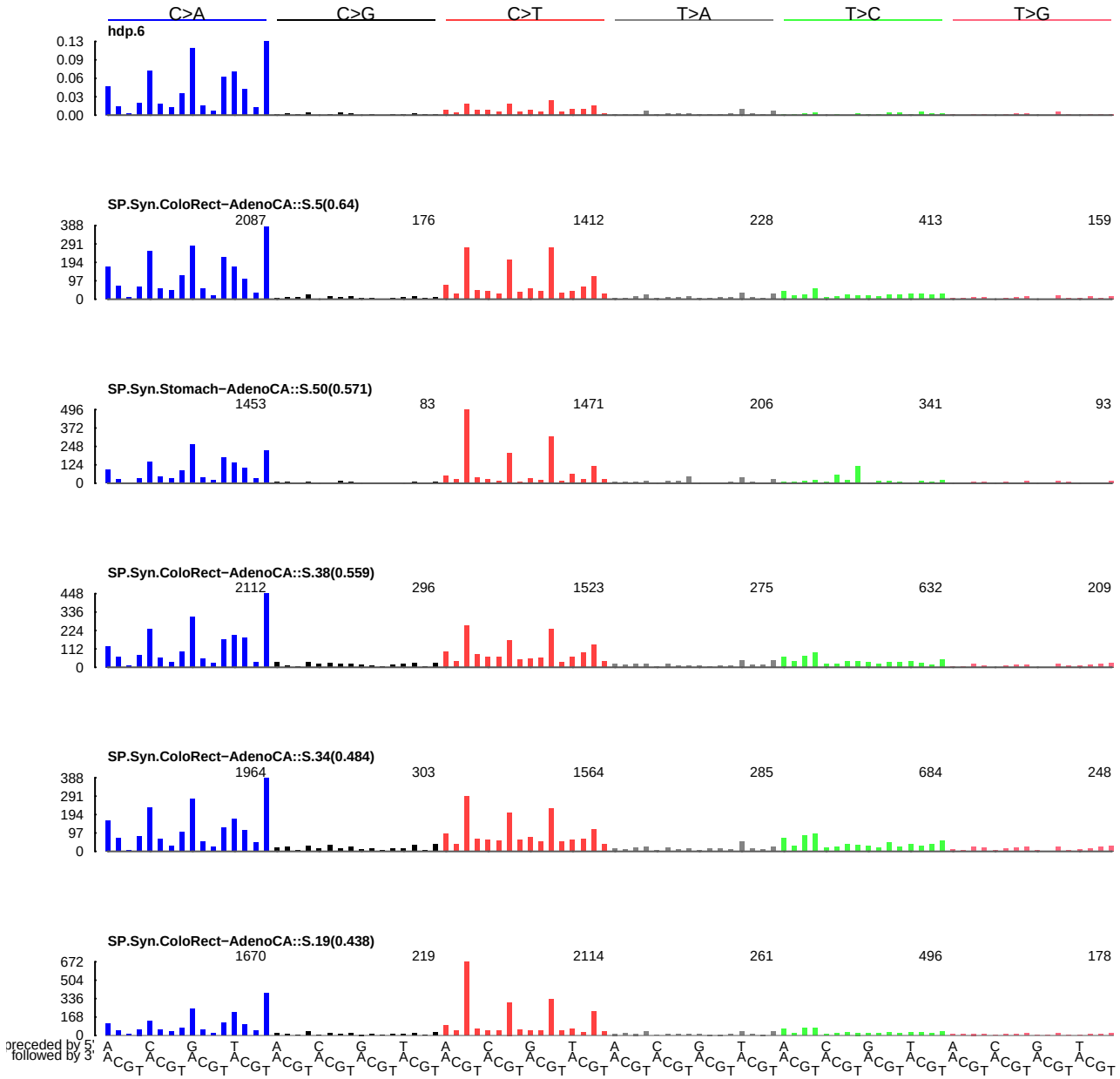

hdp.4
1.0
0.8
0.6
0.4
0.2
0.0
Proportion of exposure
0
1000
2000
3000
Exposure

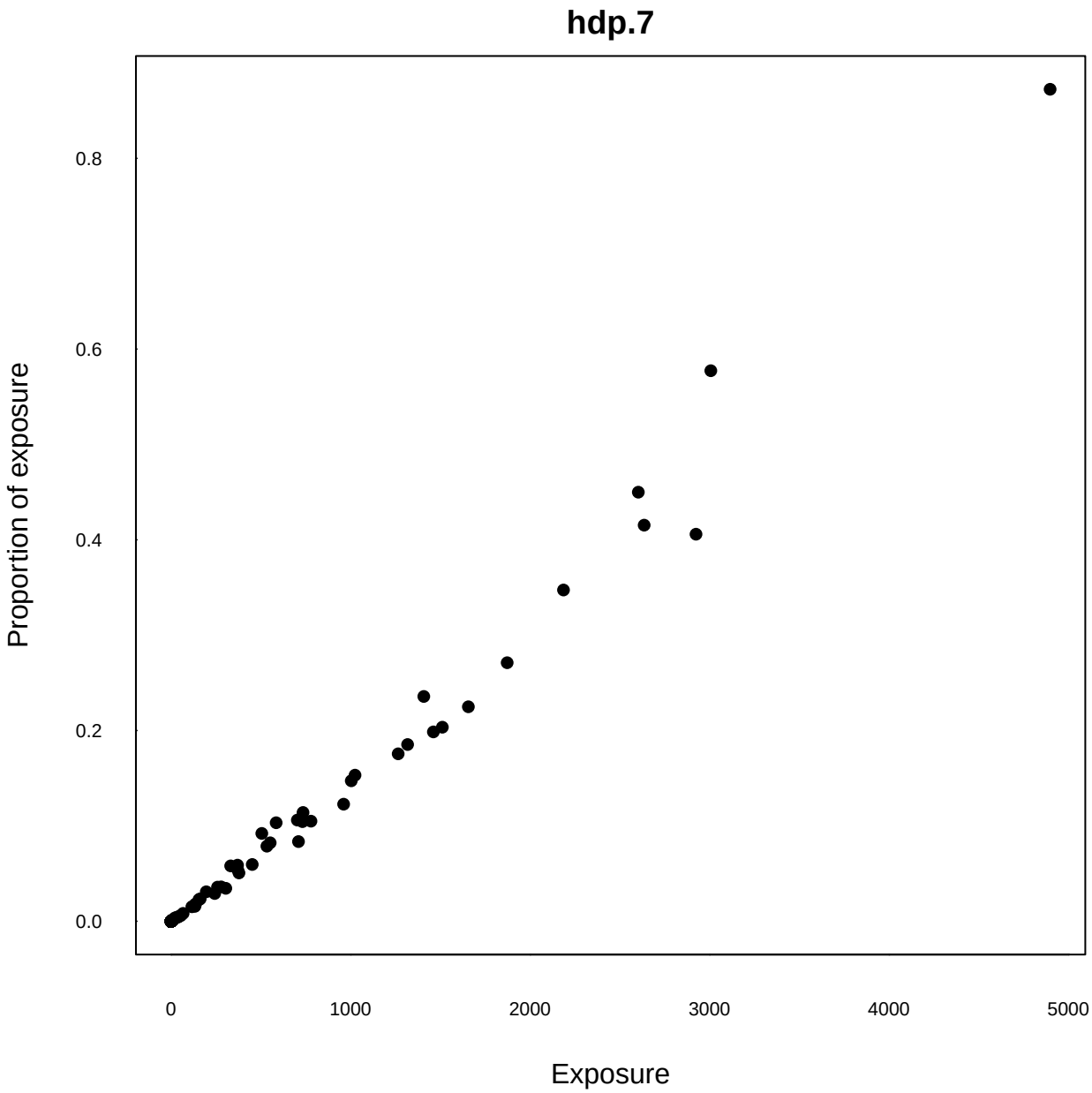

C>A
C>G
C>T
T>A
T>C
T>G
hdp.4
0.38
0.28
0.19
0.09
0.00
SP.Syn.Lung−AdenoCA::S.19(0.967)
477
2767
334
22
24
3
1408
1056
704
352
0
SP.Syn.Lung−AdenoCA::S.56(0.839)
653
2877
582
72
225
52
1488
1116
744
372
0
SP.Syn.Breast−AdenoCA::S.10(0.709)
575
2665
1383
64
174
50
1212
909
606
303
0
SP.Syn.Breast−AdenoCA::S.41(0.7)
654
2450
640
122
423
118
1224
918
612
306
0
SP.Syn.Lung−AdenoCA::S.58(0.661)
496
1963
1037
100
282
77
948
711
474
237
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

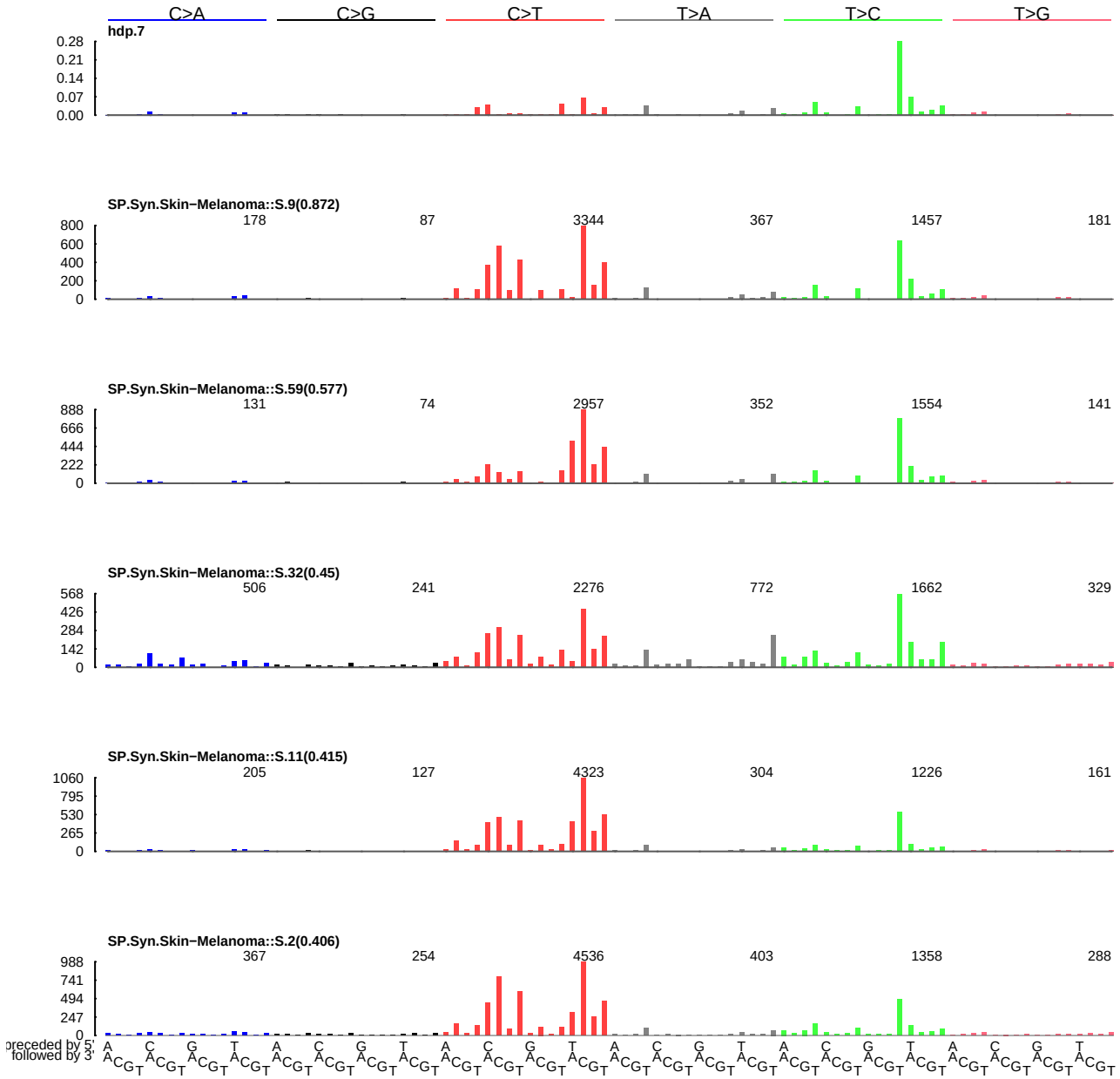

hdp.5
Proportion of exposure
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0
1000
2000
3000
4000
5000
Exposure

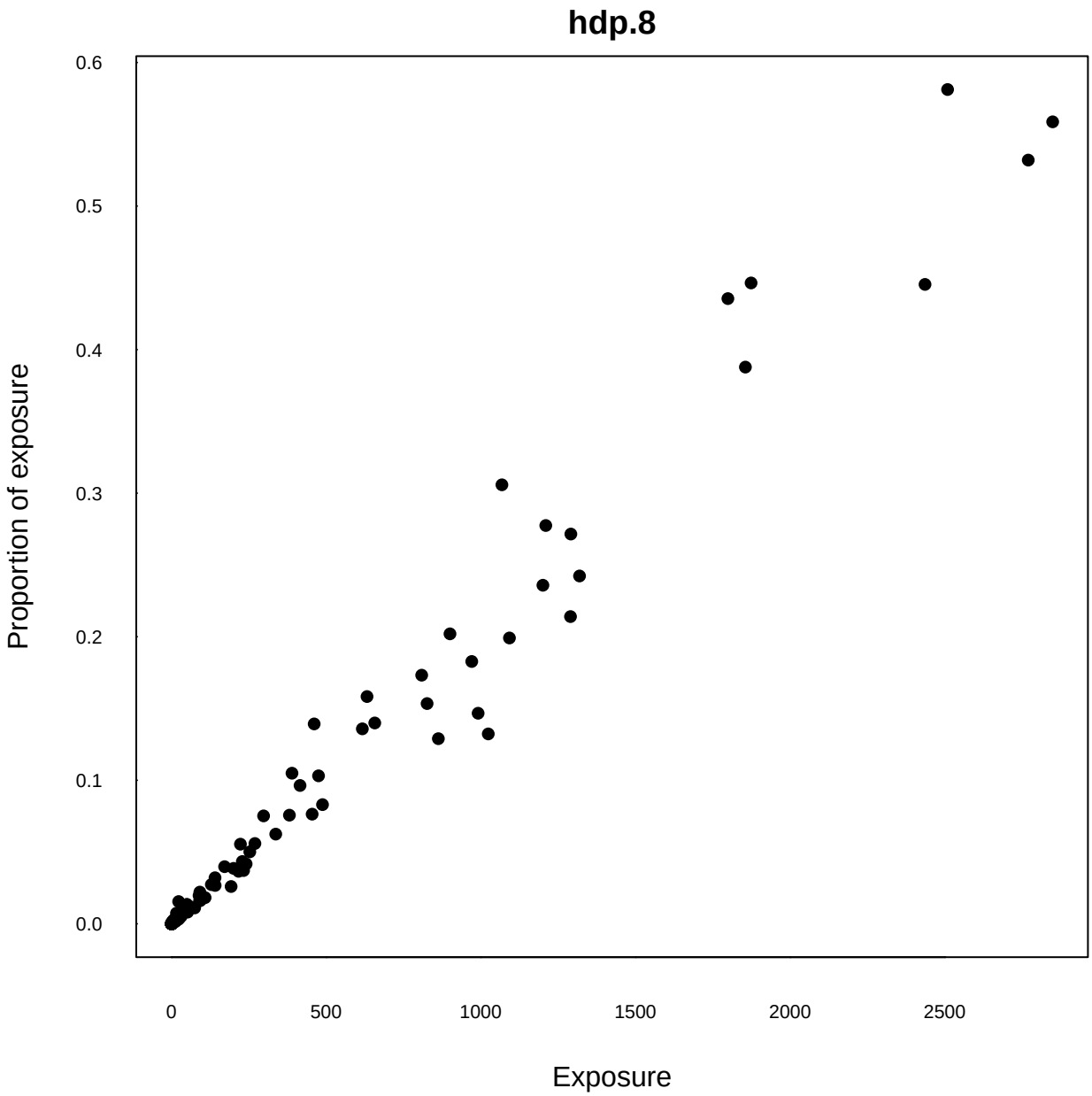

C>A
C>G
C>T
T>A
T>C
T>G
hdp.5
0.08
0.06
0.04
0.02
0.00
SP.Syn.ColoRect−AdenoCA::MSI−H.S.7(0.7)
1023
306
3508
555
1882
332
544
408
272
136
0
SP.Syn.ColoRect−AdenoCA::MSI−H.S.4(0.666)
997
204
3967
391
1471
208
732
549
366
183
0
SP.Syn.ColoRect−AdenoCA::MSI−H.S.5(0.658)
863
178
3950
432
1429
167
892
669
446
223
0
SP.Syn.Stomach−AdenoCA::MSI−H.S.1(0.595)
880
330
3512
513
1937
310
600
450
300
150
0
SP.Syn.ColoRect−AdenoCA::MSI−H.S.1(0.495)
878
335
3749
454
1609
311
580
435
290
145
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

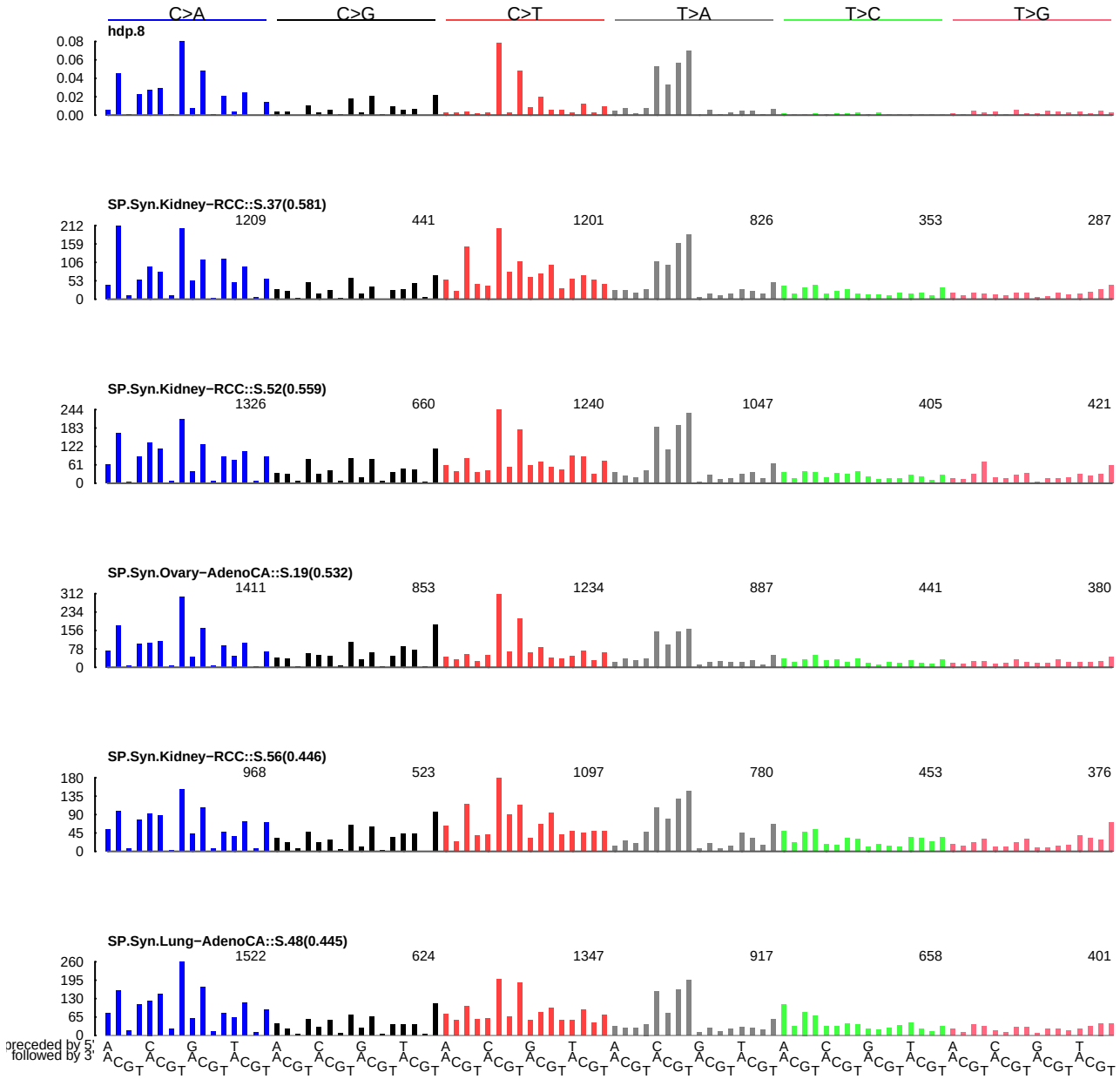

hdp.6
Proportion of exposure
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0
500
1000
1500
2000
2500
Exposure

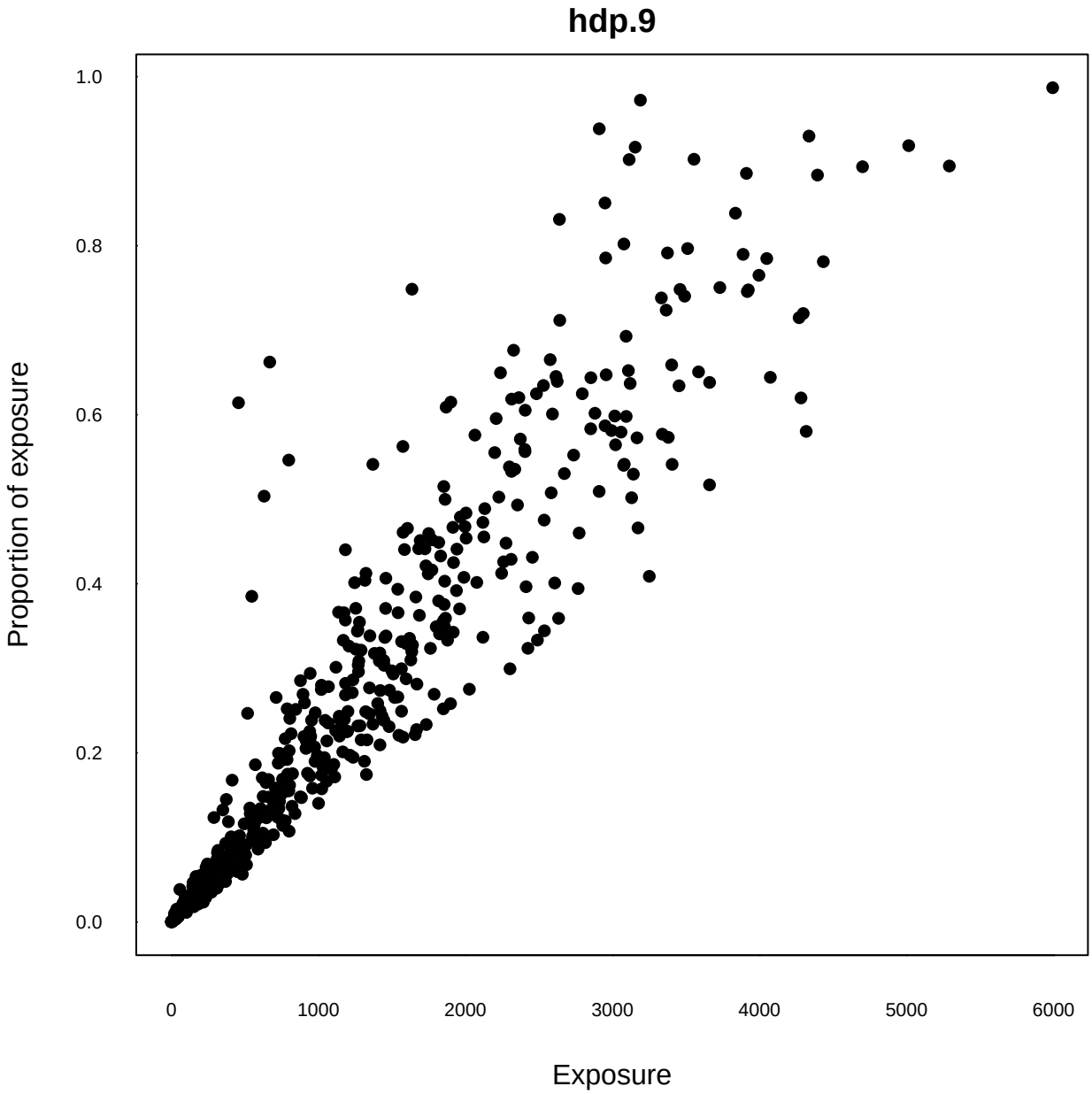

C>A
C>G
C>T
T>A
T>C
T>G
hdp.6
0.13
0.09
0.06
0.03
0.00
SP.Syn.ColoRect−AdenoCA::S.5(0.64)
2087
176
1412
228
413
159
388
291
194
97
0
SP.Syn.Stomach−AdenoCA::S.50(0.571)
1453
83
1471
206
341
93
496
372
248
124
0
SP.Syn.ColoRect−AdenoCA::S.38(0.559)
2112
296
1523
275
632
209
448
336
224
112
0
SP.Syn.ColoRect−AdenoCA::S.34(0.484)
1964
303
1564
285
684
248
388
291
194
97
0
SP.Syn.ColoRect−AdenoCA::S.19(0.438)
1670
219
2114
261
496
178
672
504
336
168
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

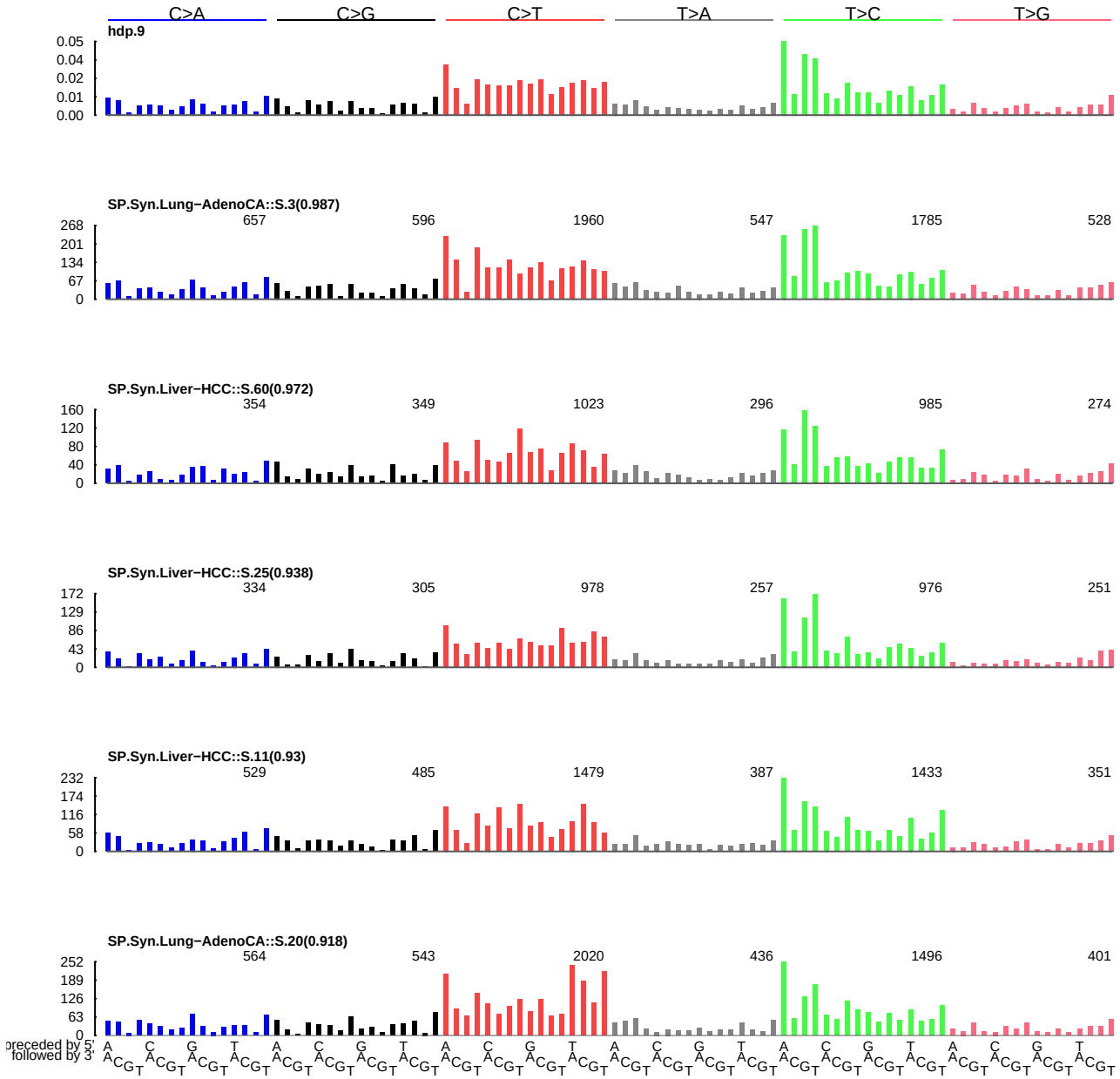

hdp.7
Proportion of exposure
0.0
0.2
0.4
0.6
0.8
0
1000
2000
3000
4000
5000
Exposure

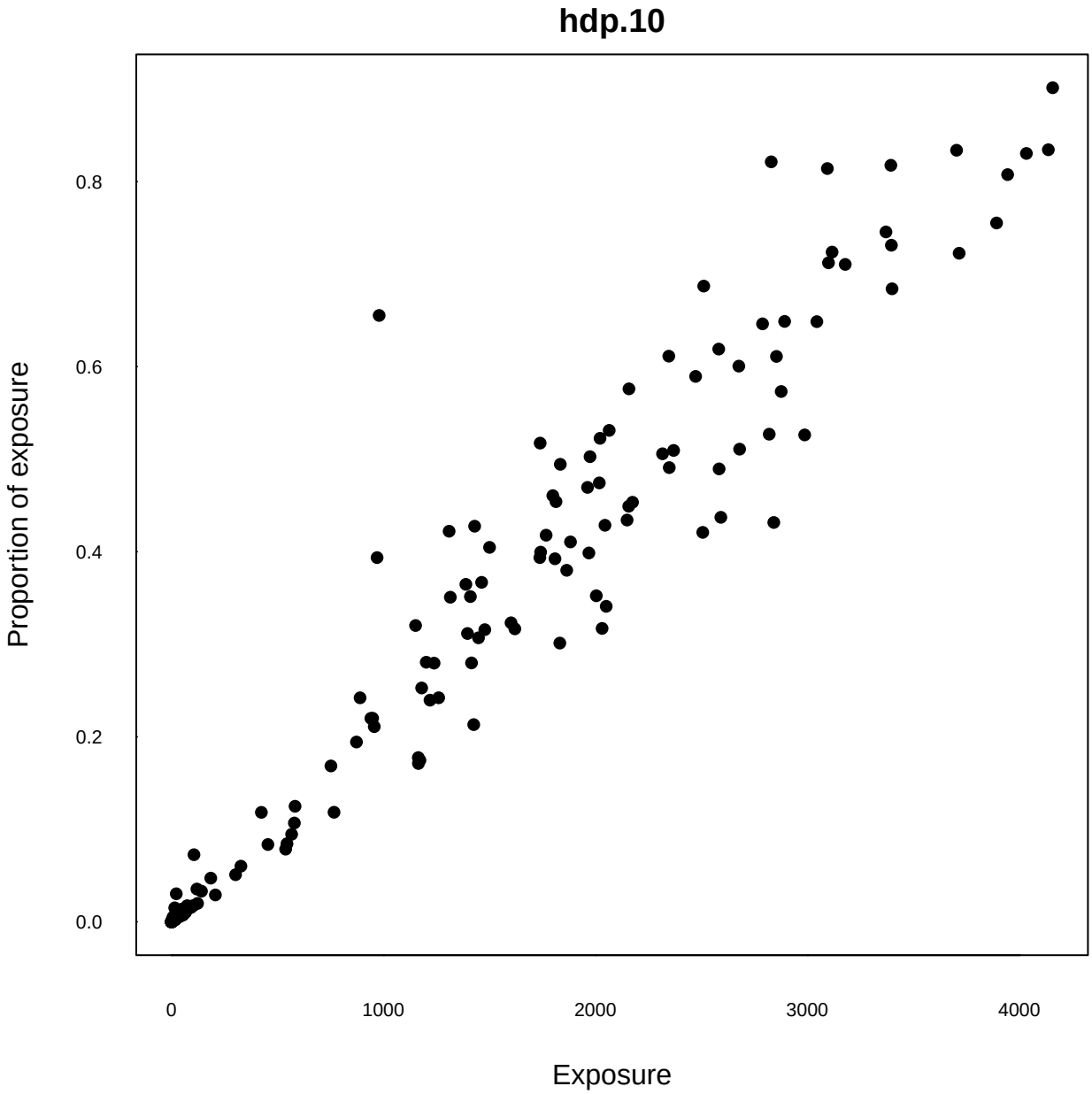

C>A
C>G
C>T
T>A
T>C
T>G
hdp.7
0.28
0.21
0.14
0.07
0.00
SP.Syn.Skin−Melanoma::S.9(0.872)
178
87
3344
367
1457
181
800
600
400
200
0
SP.Syn.Skin−Melanoma::S.59(0.577)
131
74
2957
352
1554
141
888
666
444
222
0
SP.Syn.Skin−Melanoma::S.32(0.45)
506
241
2276
772
1662
329
568
426
284
142
0
SP.Syn.Skin−Melanoma::S.11(0.415)
205
127
4323
304
1226
161
1060
795
530
265
0
SP.Syn.Skin−Melanoma::S.2(0.406)
367
254
4536
403
1358
288
988
741
494
247
0
preceded by 5'
followed by 3'

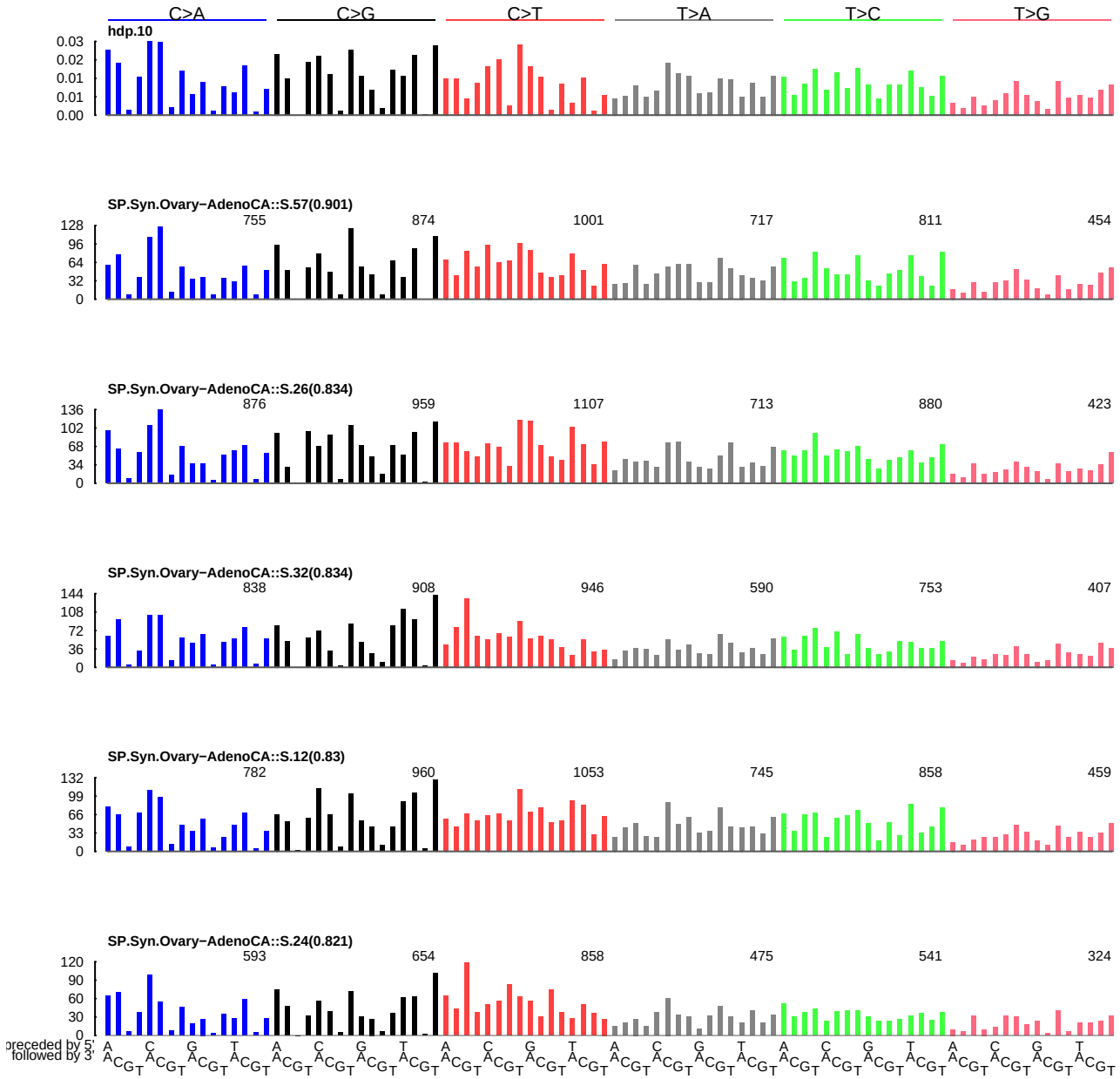

hdp.8
Proportion of exposure
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0
500
1000
1500
2000
2500
Exposure

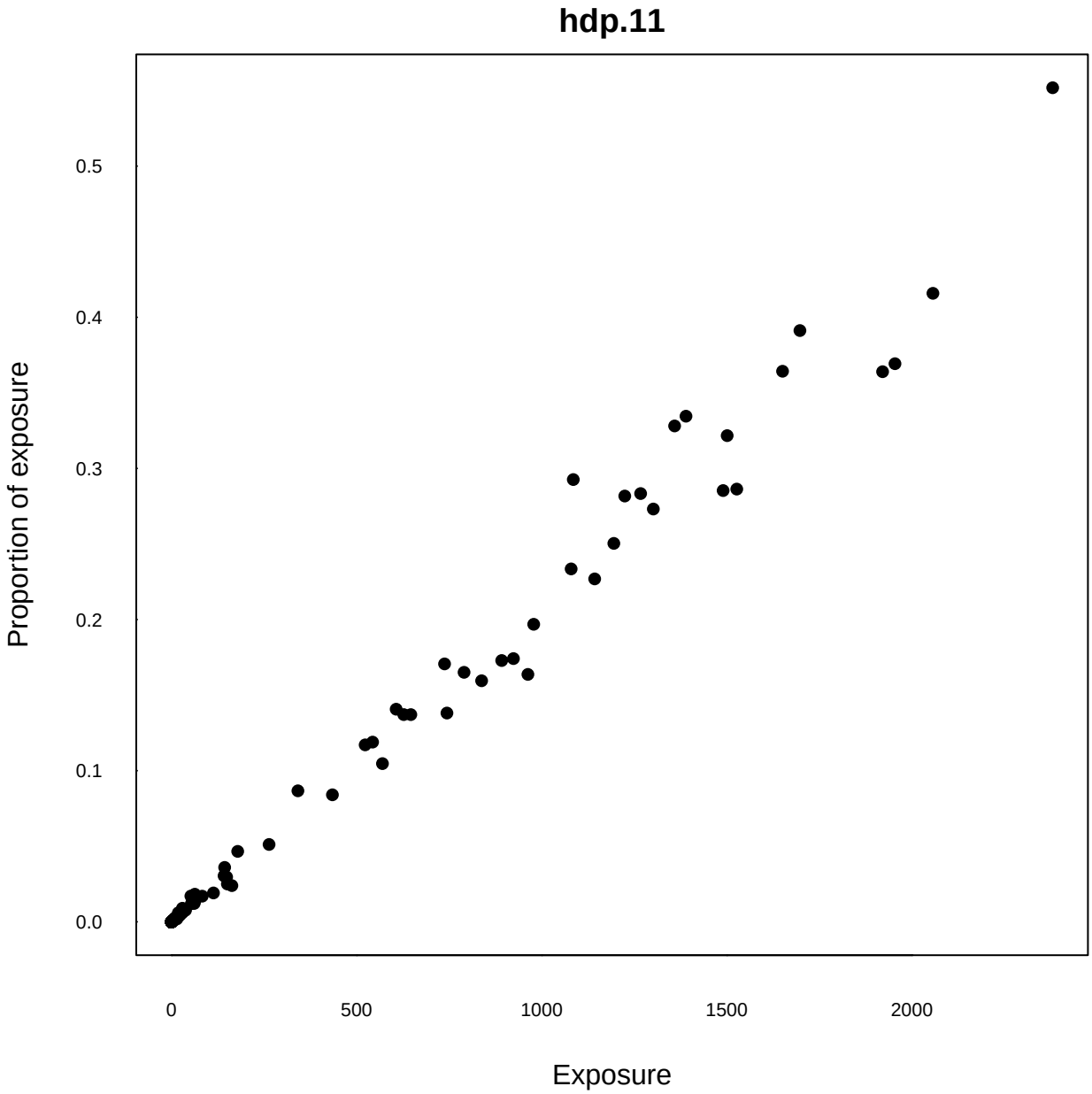

C>A
C>G
C>T
T>A
T>C
T>G
hdp.8
0.08
0.06
0.04
0.02
0.00
SP.Syn.Kidney−RCC::S.37(0.581)
1209
441
1201
826
353
287
212
159
106
53
0
SP.Syn.Kidney−RCC::S.52(0.559)
1326
660
1240
1047
405
421
244
183
122
61
0
SP.Syn.Ovary−AdenoCA::S.19(0.532)
1411
853
1234
887
441
380
312
234
156
78
0
SP.Syn.Kidney−RCC::S.56(0.446)
968
523
1097
780
453
376
180
135
90
45
0
SP.Syn.Lung−AdenoCA::S.48(0.445)
1522
624
1347
917
658
401
260
195
130
65
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

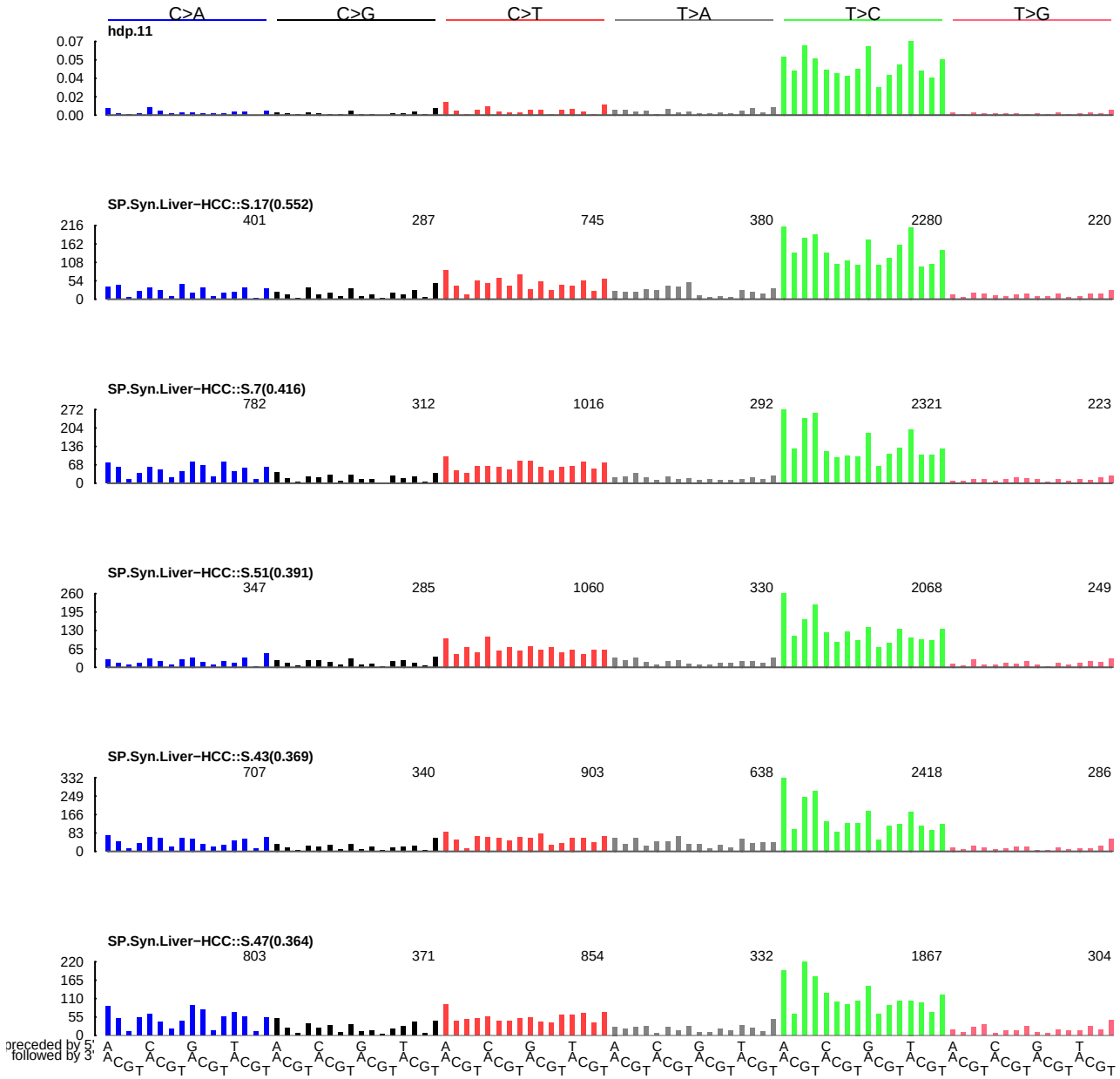

hdp.9
Proportion of exposure
1.0
0.8
0.6
0.4
0.2
0.0
0
1000
2000
3000
4000
5000
6000
Exposure

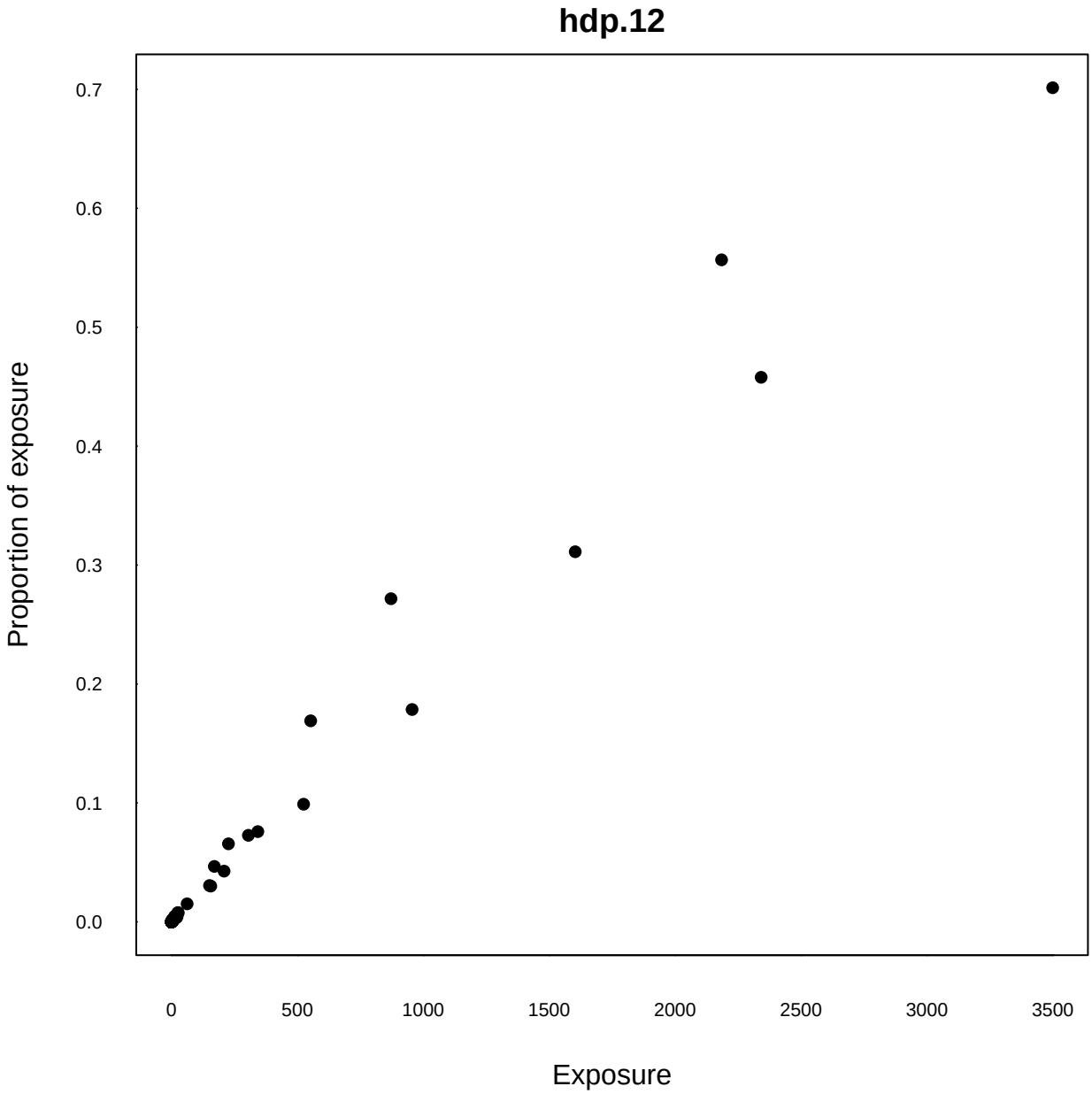

C>A
C>G
C>T
T>A
T>C
T>G
hdp.9
0.05
0.04
0.02
0.01
0.00
SP.Syn.Lung−AdenoCA::S.3(0.987)
657
596
1960
547
1785
528
268
201
134
67
0
SP.Syn.Liver−HCC::S.60(0.972)
354
349
1023
296
985
274
160
120
80
40
0
SP.Syn.Liver−HCC::S.25(0.938)
334
305
978
257
976
251
172
129
86
43
0
SP.Syn.Liver−HCC::S.11(0.93)
529
485
1479
387
1433
351
232
174
116
58
0
SP.Syn.Lung−AdenoCA::S.20(0.918)
564
543
2020
436
1496
401
252
189
126
63
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

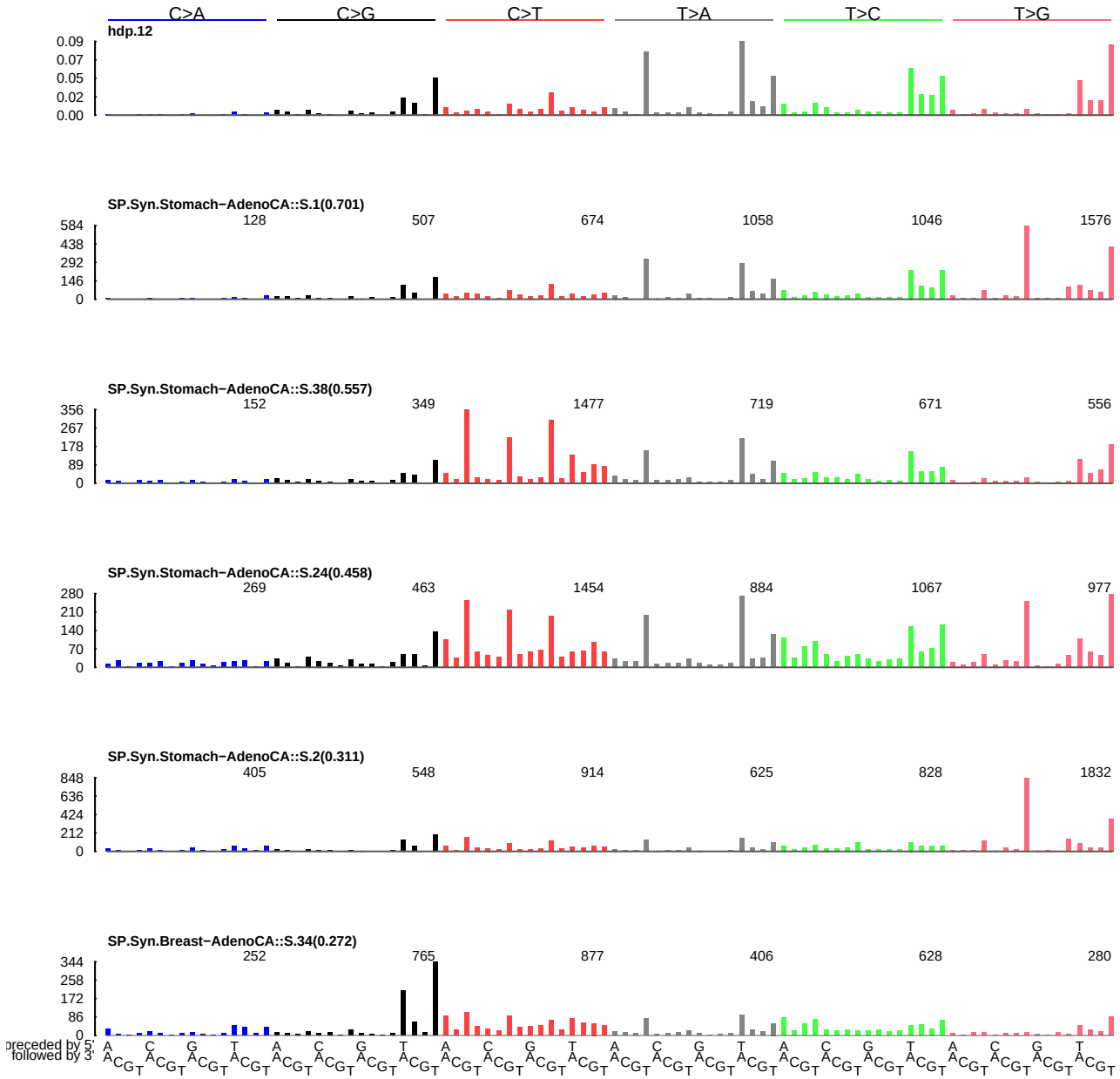

hdp.10
Proportion of exposure
0.0
0.2
0.4
0.6
0.8
0
1000
2000
3000
4000
Exposure

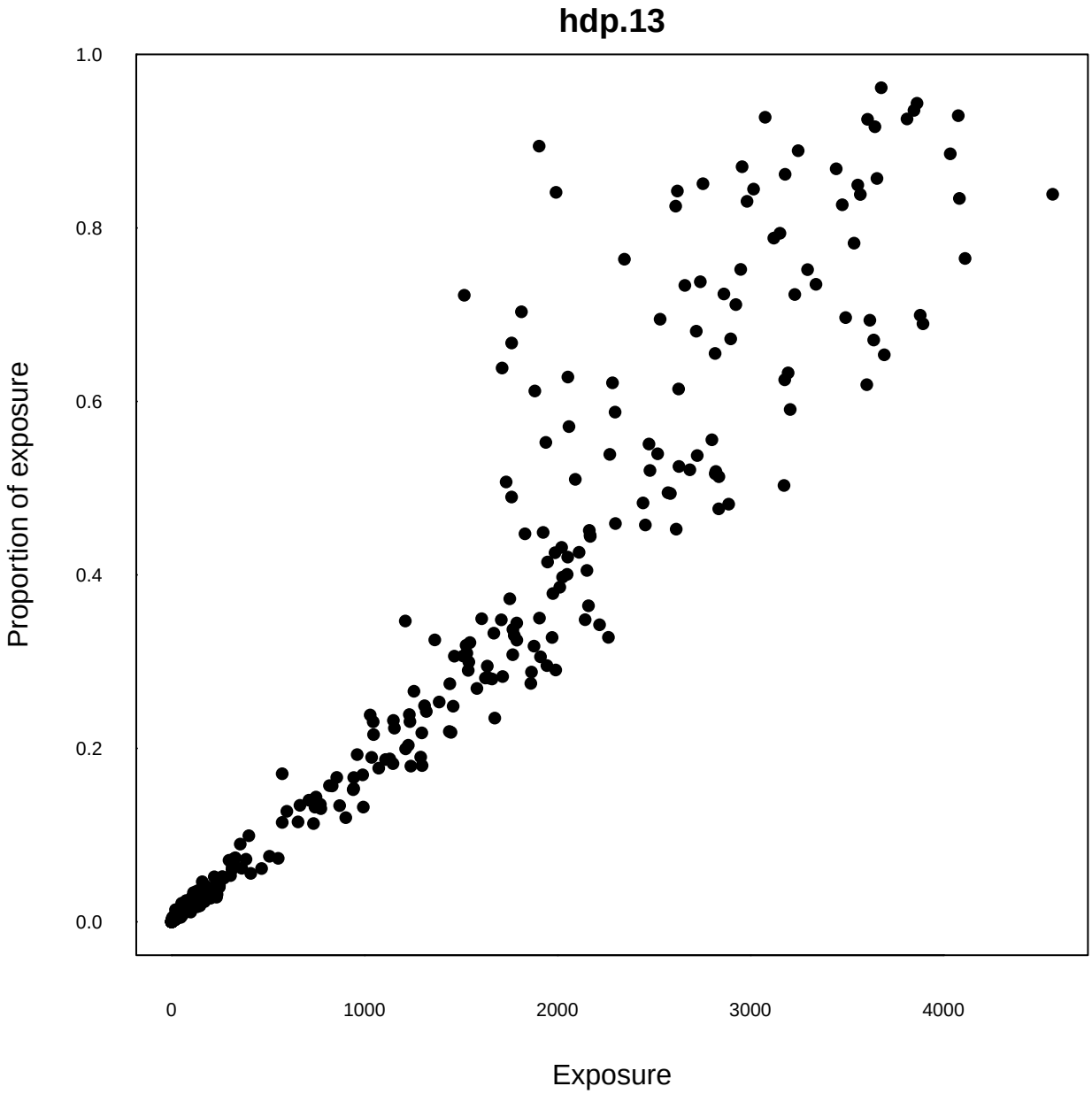

C>A
C>G
C>T
T>A
T>C
T>G
hdp.10
0.03
0.02
0.01
0.01
0.00
SP.Syn.Ovary−AdenoCA::S.57(0.901)
755
874
1001
717
811
454
128
96
64
32
0
SP.Syn.Ovary−AdenoCA::S.26(0.834)
876
959
1107
713
880
423
136
102
68
34
0
SP.Syn.Ovary−AdenoCA::S.32(0.834)
838
908
946
590
753
407
144
108
72
36
0
SP.Syn.Ovary−AdenoCA::S.12(0.83)
782
960
1053
745
858
459
132
99
66
33
0
SP.Syn.Ovary−AdenoCA::S.24(0.821)
593
654
858
475
541
324
120
90
60
30
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

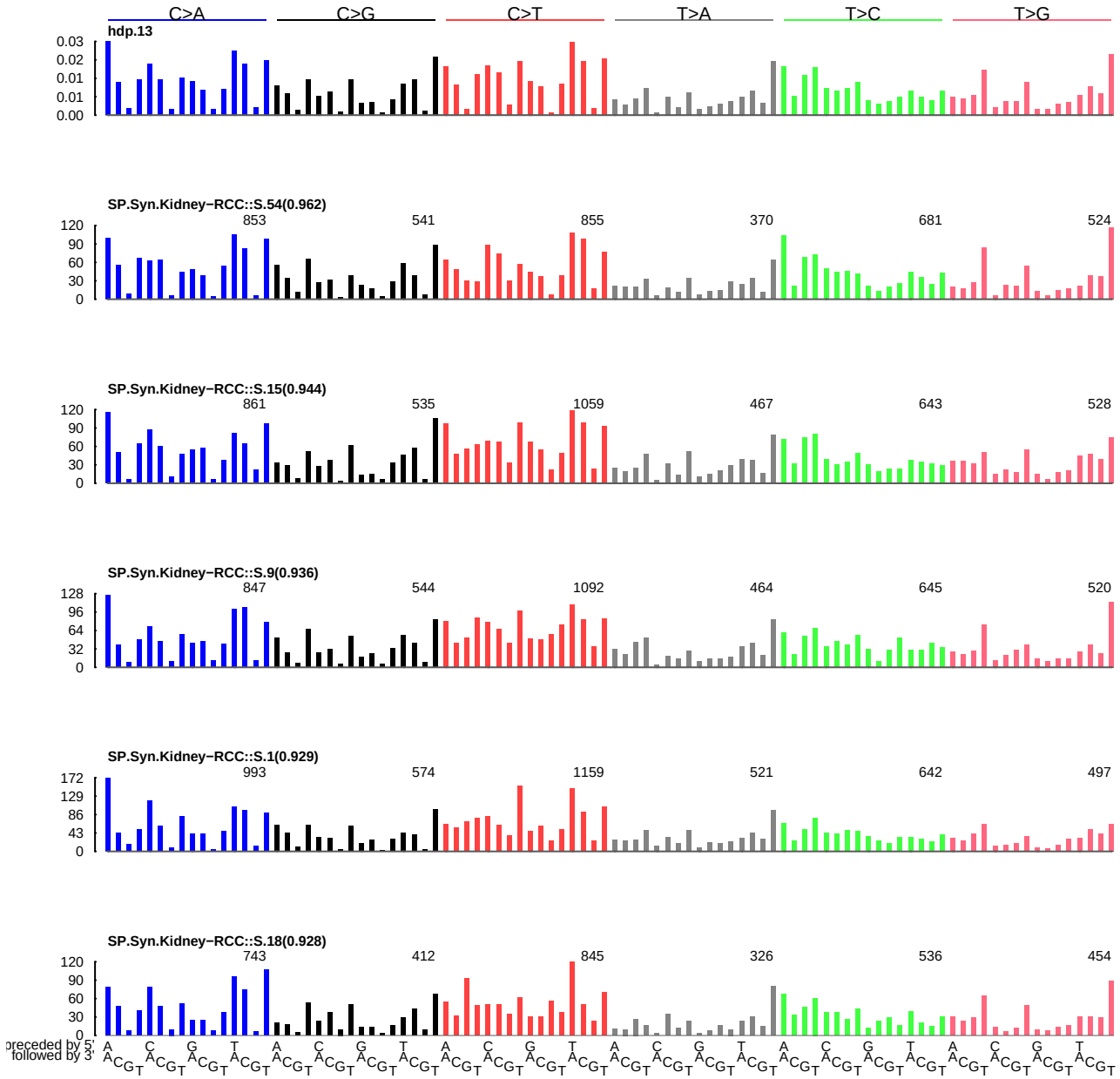

hdp.11
Proportion of exposure
0.0
0.1
0.2
0.3
0.4
0.5
0
500
1000
1500
2000
Exposure

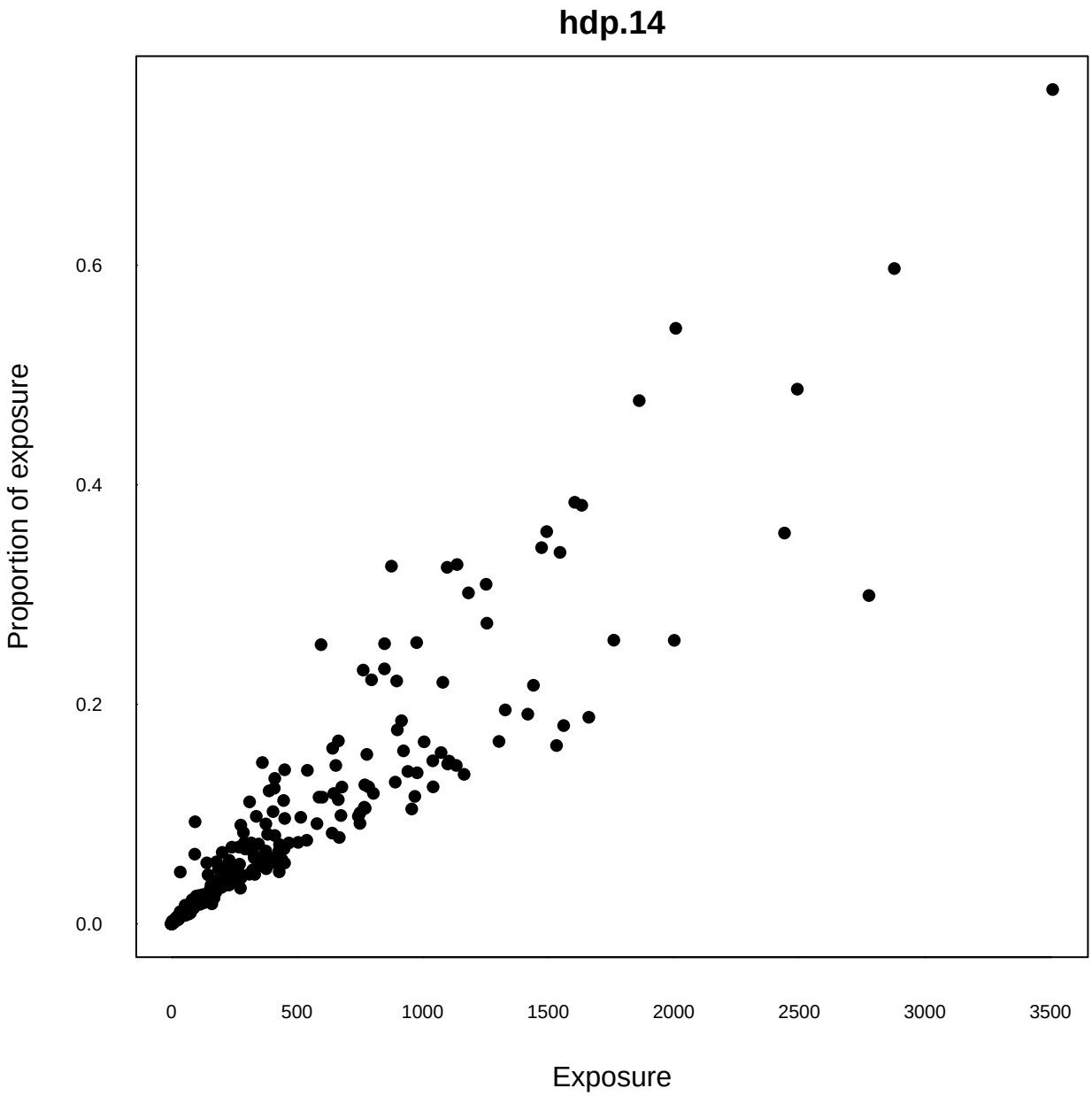

C>A
C>G
C>T
T>A
T>C
T>G
hdp.11
0.07
0.05
0.04
0.02
0.00
SP.Syn.Liver−HCC::S.17(0.552)
401
287
745
380
2280
220
216
162
108
54
0
SP.Syn.Liver−HCC::S.7(0.416)
782
312
1016
292
2321
223
272
204
136
68
0
SP.Syn.Liver−HCC::S.51(0.391)
347
285
1060
330
2068
249
260
195
130
65
0
SP.Syn.Liver−HCC::S.43(0.369)
707
340
903
638
2418
286
332
249
166
83
0
SP.Syn.Liver−HCC::S.47(0.364)
803
371
854
332
1867
304
220
165
110
55
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

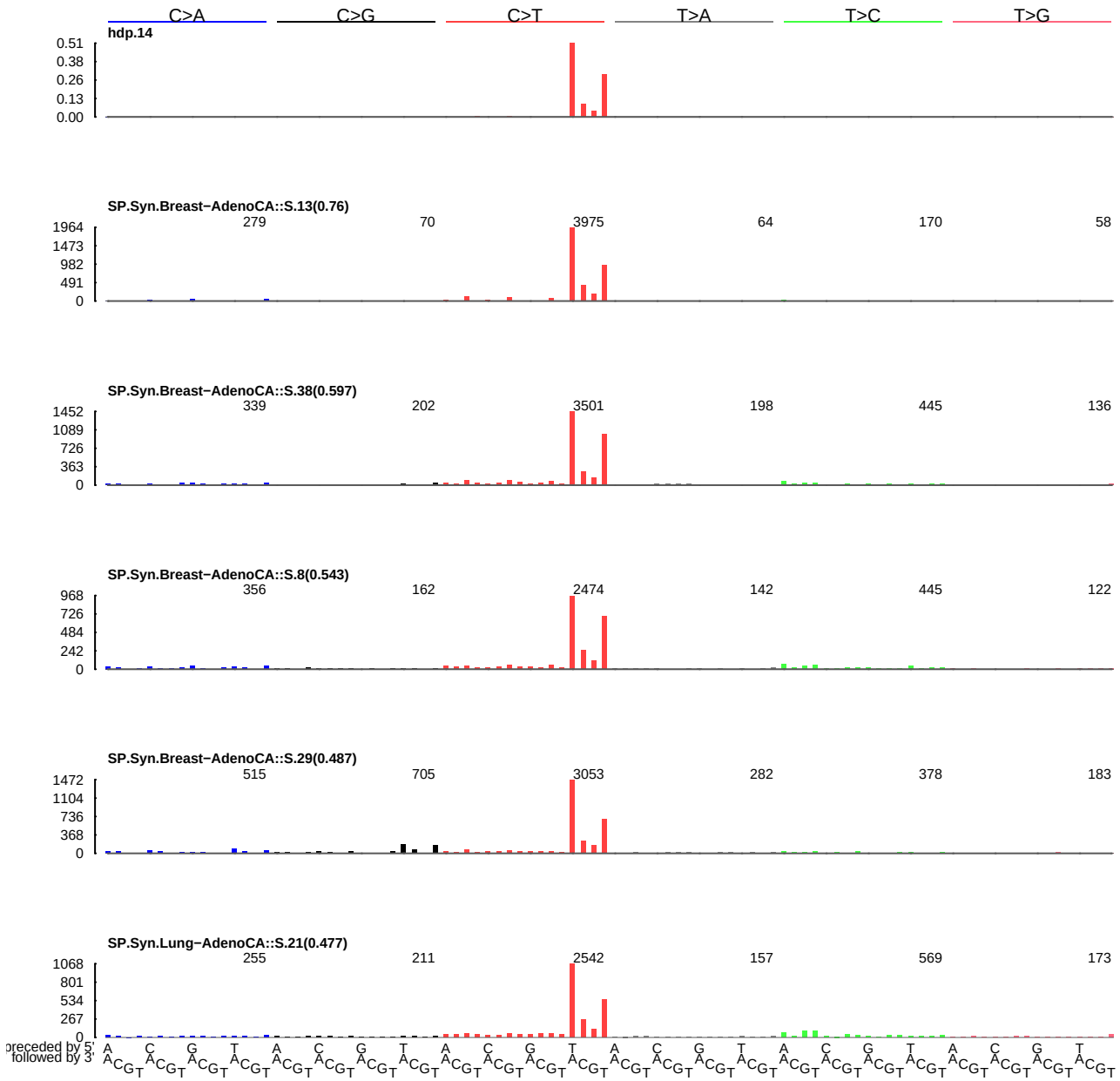

hdp.12
Proportion of exposure
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0
500
1000
1500
2000
2500
3000
3500
Exposure

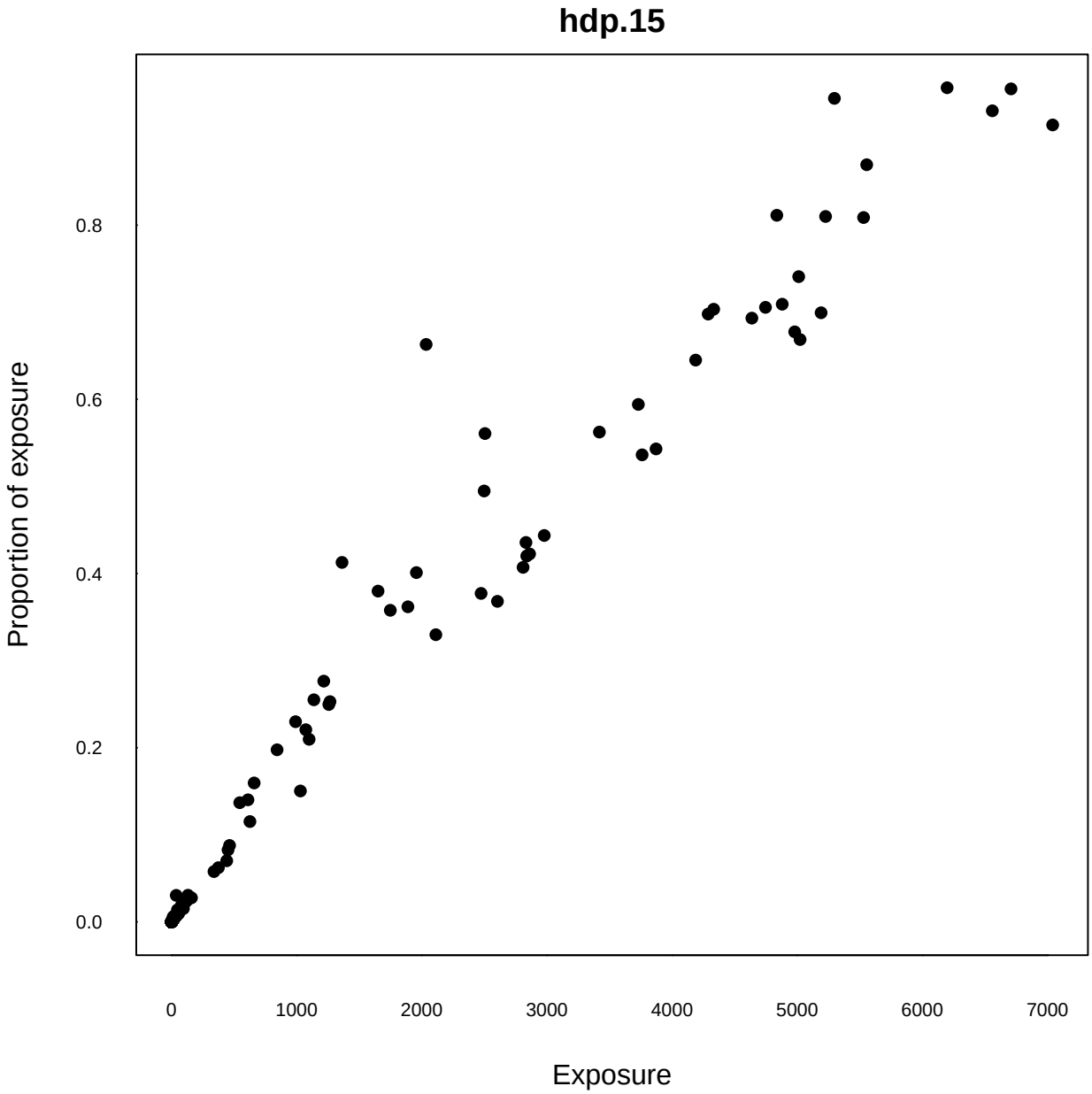

C>A
C>G
C>T
T>A
T>C
T>G
hdp.12
0.09
0.07
0.05
0.02
0.00
SP.Syn.Stomach−AdenoCA::S.1(0.701)
128
507
674
1058
1046
1576
584
438
292
146
0
SP.Syn.Stomach−AdenoCA::S.38(0.557)
152
349
1477
719
671
556
356
267
178
89
0
SP.Syn.Stomach−AdenoCA::S.24(0.458)
269
463
1454
884
1067
977
280
210
140
70
0
SP.Syn.Stomach−AdenoCA::S.2(0.311)
405
548
914
625
828
1832
848
636
424
212
0
SP.Syn.Breast−AdenoCA::S.34(0.272)
252
765
877
406
628
280
344
258
172
86
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

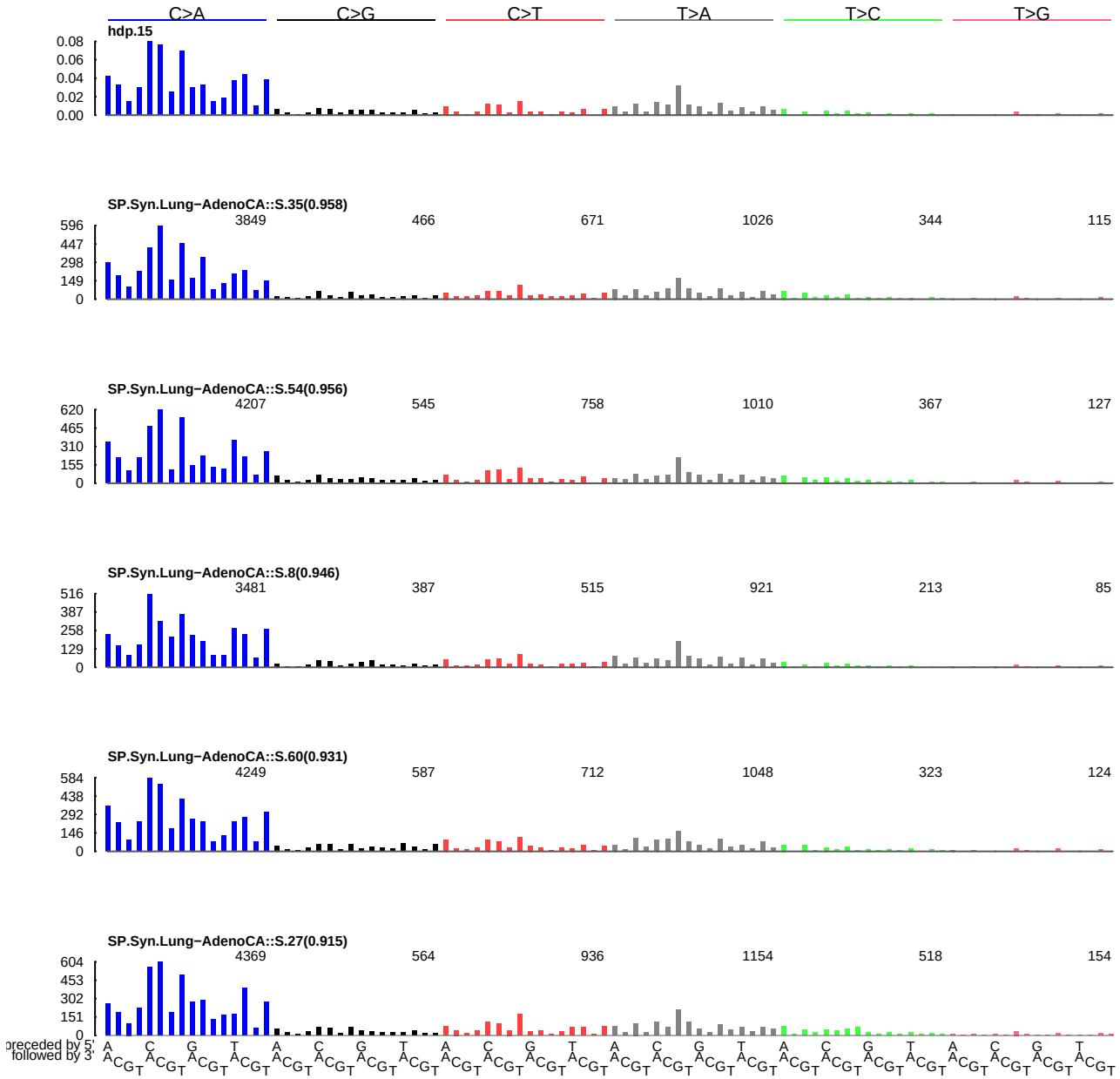

hdp.13
Proportion of exposure
1.0
0.8
0.6
0.4
0.2
0.0
0
1000
2000
3000
4000
Exposure

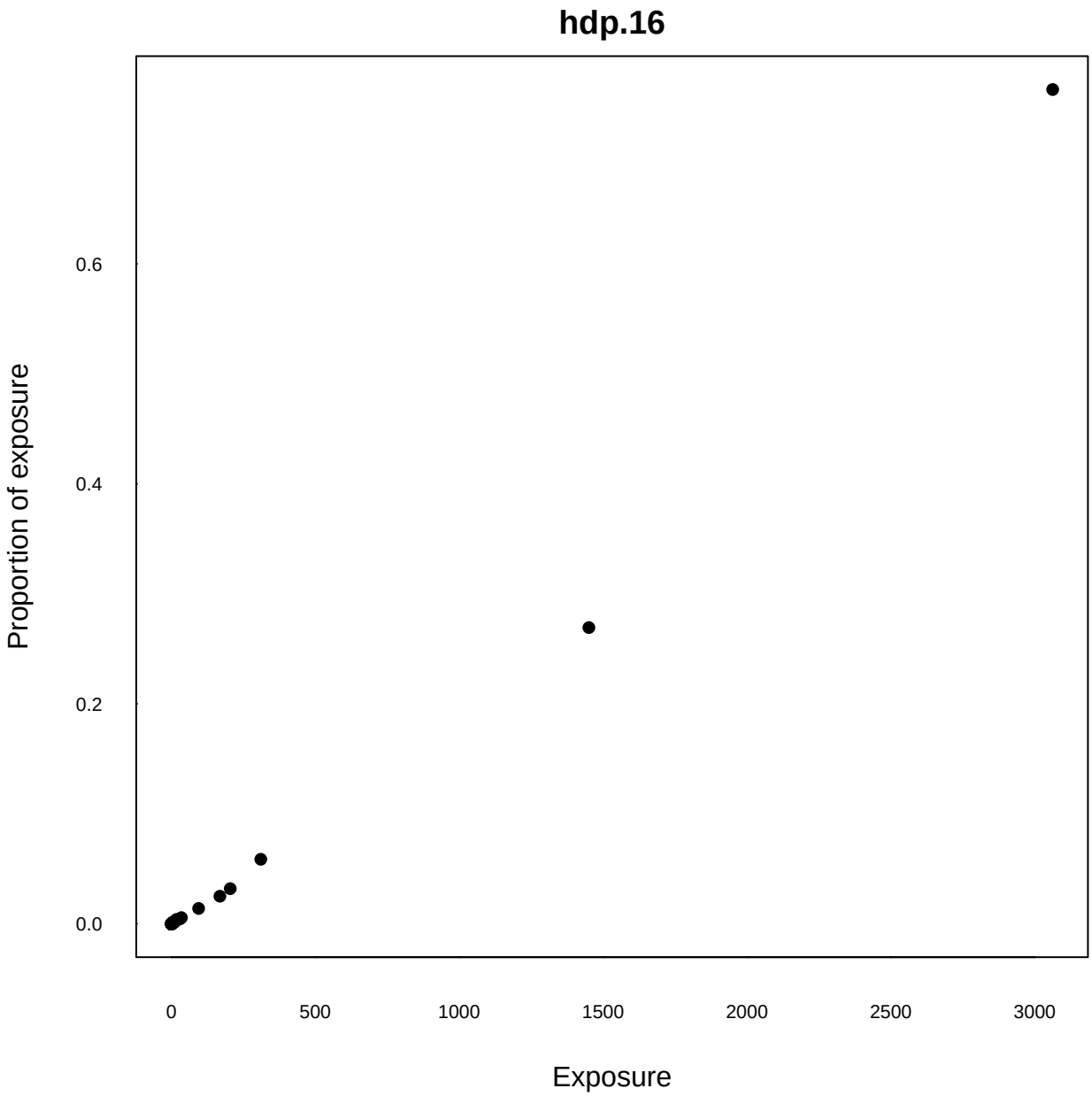

C>A
C>G
C>T
T>A
T>C
T>G
hdp.13
0.03
0.02
0.01
0.01
0.00
SP.Syn.Kidney−RCC::S.54(0.962)
853
541
855
370
681
524
120
90
60
30
0
SP.Syn.Kidney−RCC::S.15(0.944)
861
535
1059
467
643
528
120
90
60
30
0
SP.Syn.Kidney−RCC::S.9(0.936)
847
544
1092
464
645
520
128
96
64
32
0
SP.Syn.Kidney−RCC::S.1(0.929)
993
574
1159
521
642
497
172
129
86
43
0
SP.Syn.Kidney−RCC::S.18(0.928)
743
412
845
326
536
454
120
90
60
30
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

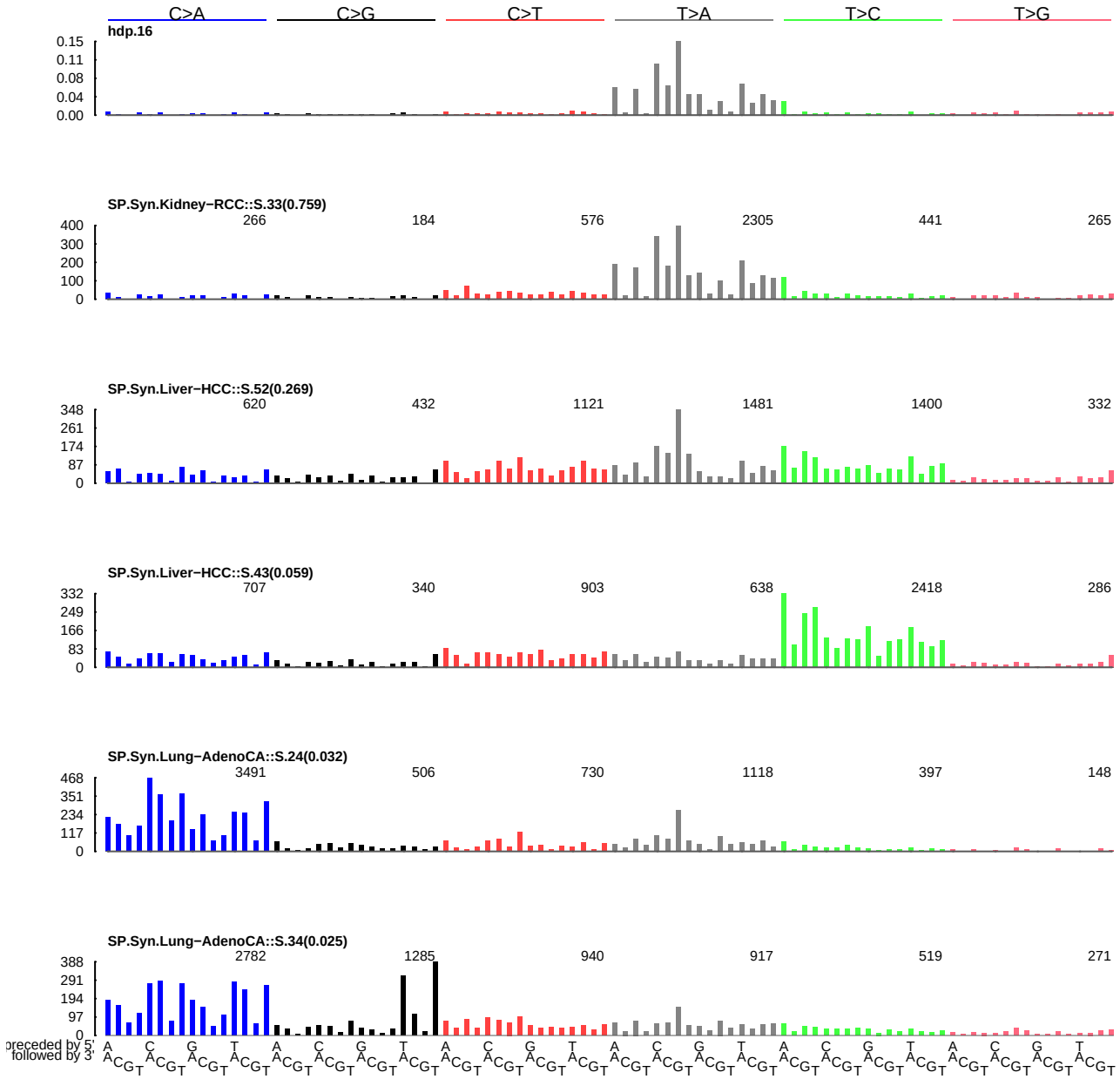

hdp.14
Proportion of exposure
0.0
0.2
0.4
0.6
0
500
1000
1500
2000
2500
3000
3500
Exposure

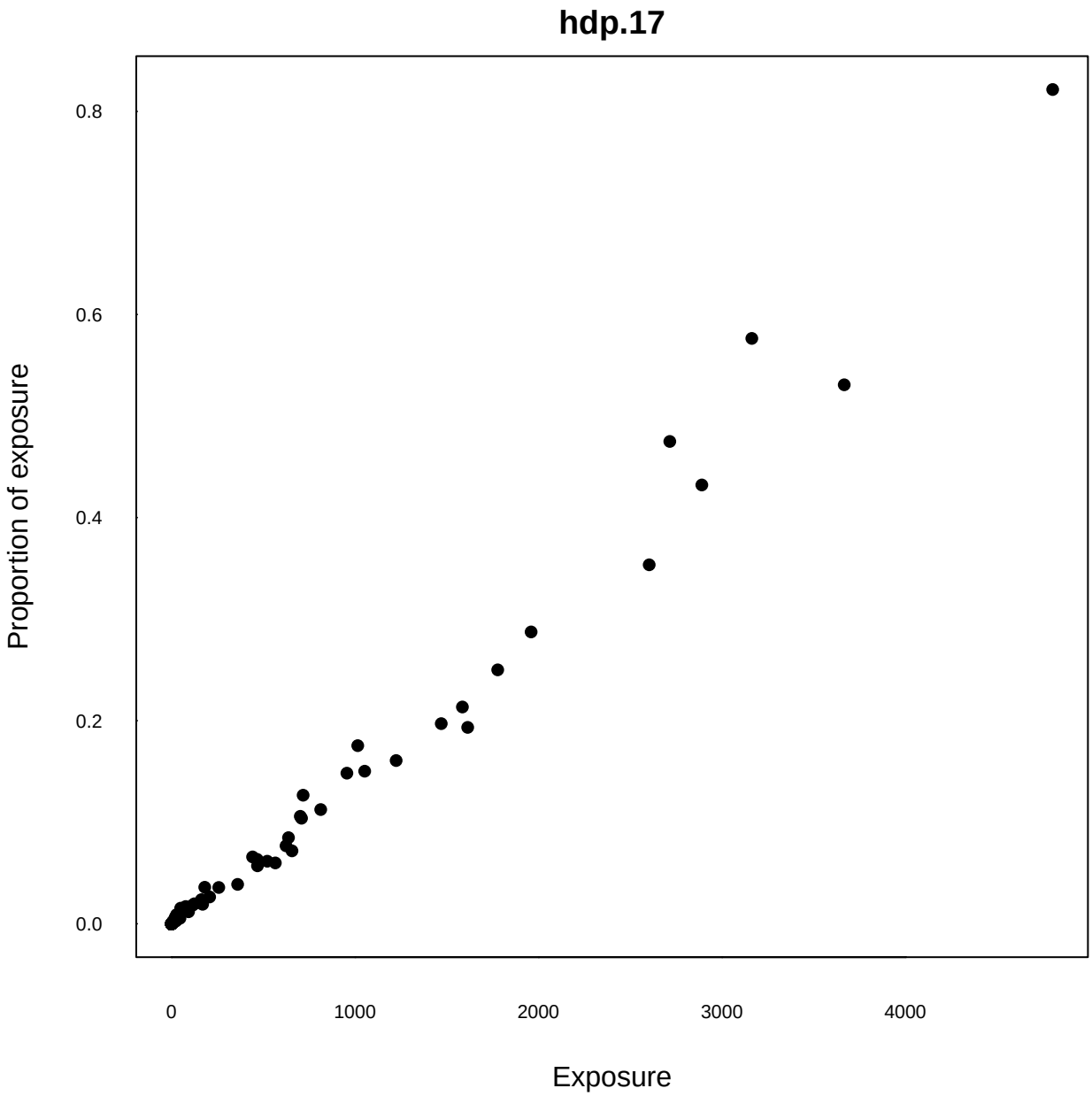

C>A
C>G
C>T
T>A
T>C
T>G
hdp.14
0.51
0.38
0.26
0.13
0.00
SP.Syn.Breast−AdenoCA::S.13(0.76)
279
70
3975
64
170
58
1964
1473
982
491
0
SP.Syn.Breast−AdenoCA::S.38(0.597)
339
202
3501
198
445
136
1452
1089
726
363
0
SP.Syn.Breast−AdenoCA::S.8(0.543)
356
162
2474
142
445
122
968
726
484
242
0
SP.Syn.Breast−AdenoCA::S.29(0.487)
515
705
3053
282
378
183
1472
1104
736
368
0
SP.Syn.Lung−AdenoCA::S.21(0.477)
255
211
2542
157
569
173
1068
801
534
267
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

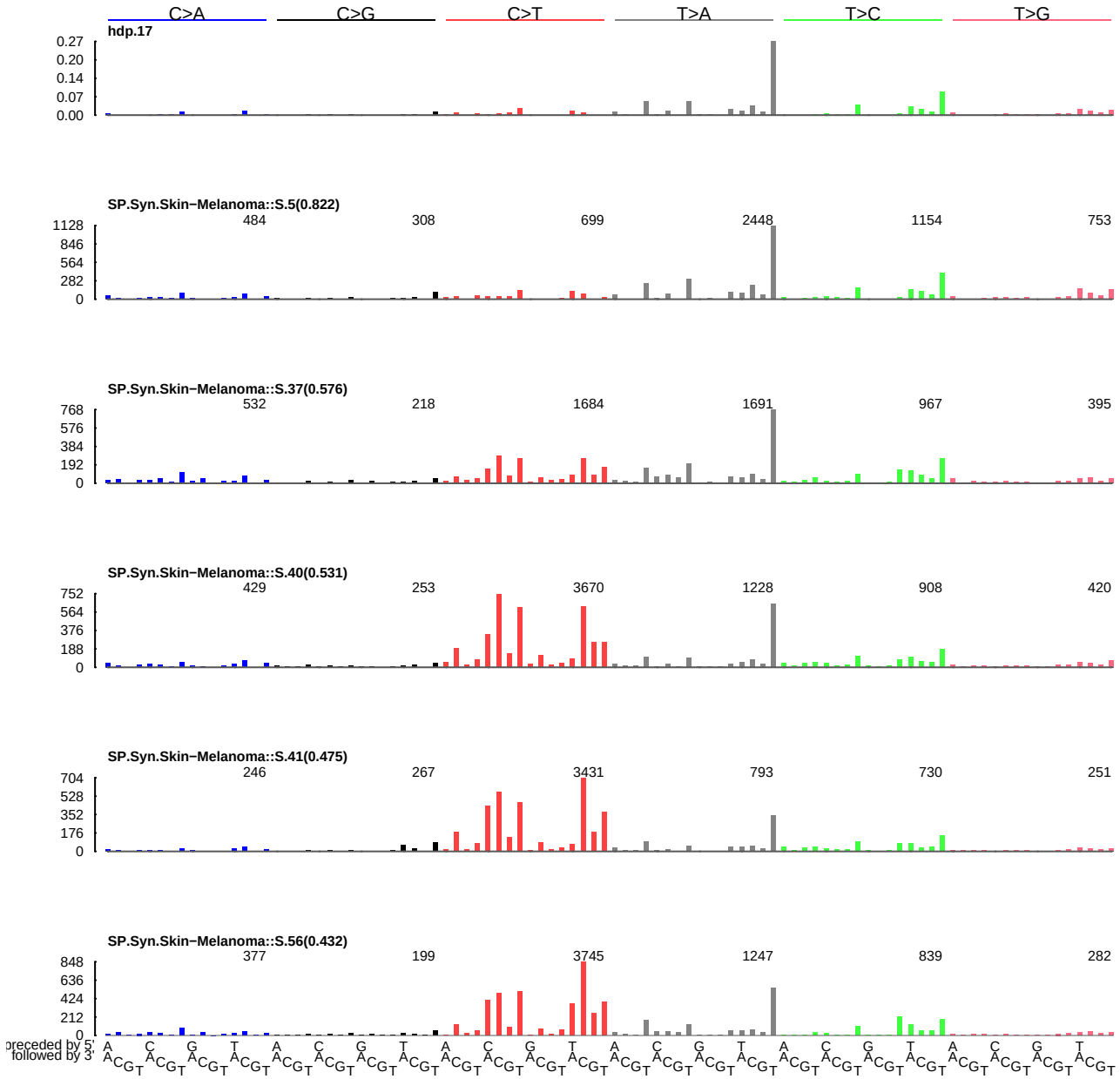

hdp.15
Proportion of exposure
0.0
0.2
0.4
0.6
0.8
0
1000
2000
3000
4000
5000
6000
7000
Exposure

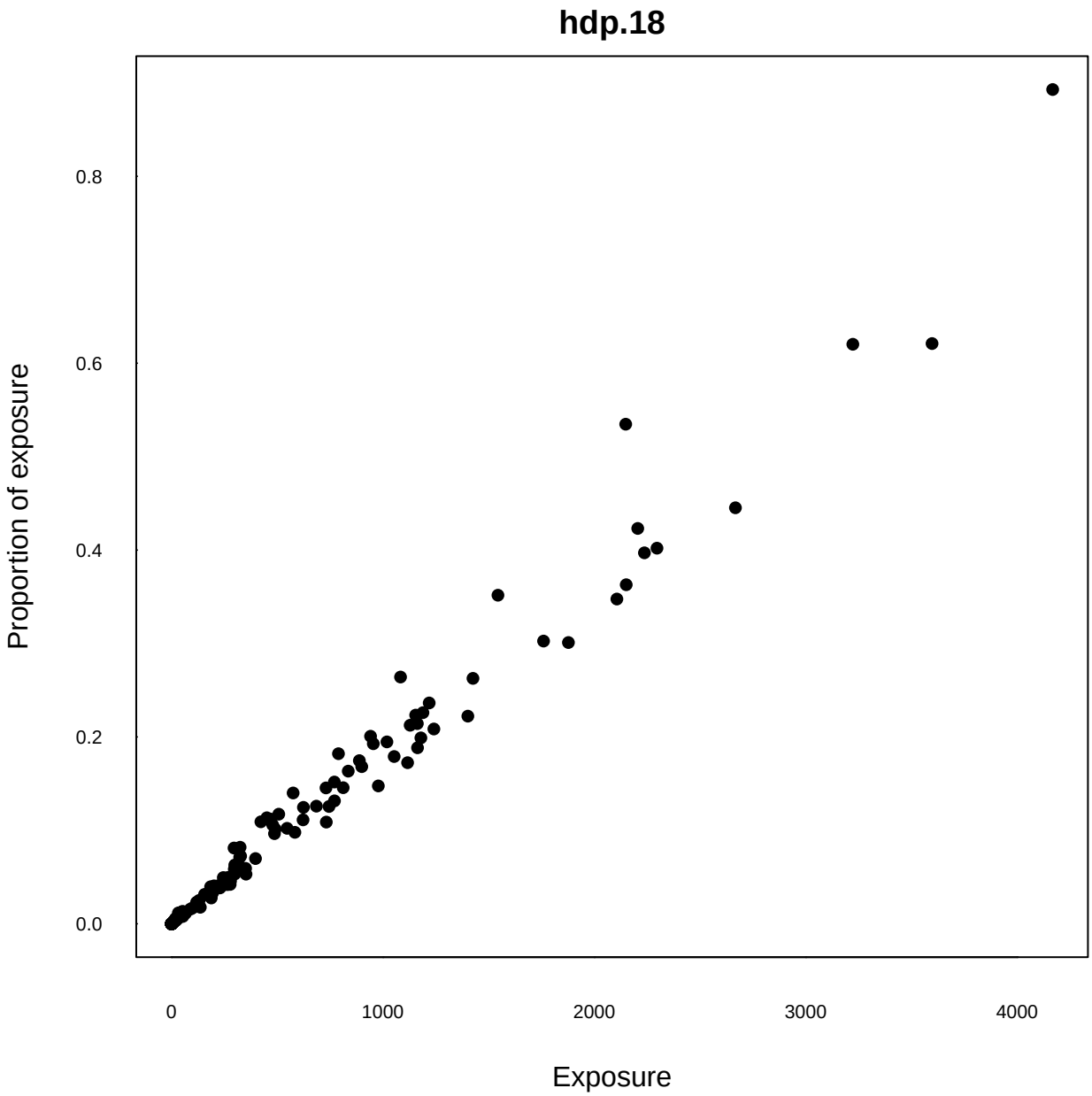

C>A
C>G
C>T
T>A
T>C
T>G
hdp.15
0.08
0.06
0.04
0.02
0.00
SP.Syn.Lung−AdenoCA::S.35(0.958)
3849
466
671
1026
344
115
596
447
298
149
0
SP.Syn.Lung−AdenoCA::S.54(0.956)
4207
545
758
1010
367
127
620
465
310
155
0
SP.Syn.Lung−AdenoCA::S.8(0.946)
3481
387
515
921
213
85
516
387
258
129
0
SP.Syn.Lung−AdenoCA::S.60(0.931)
4249
587
712
1048
323
124
584
438
292
146
0
SP.Syn.Lung−AdenoCA::S.27(0.915)
4369
564
936
1154
518
154
604
453
302
151
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

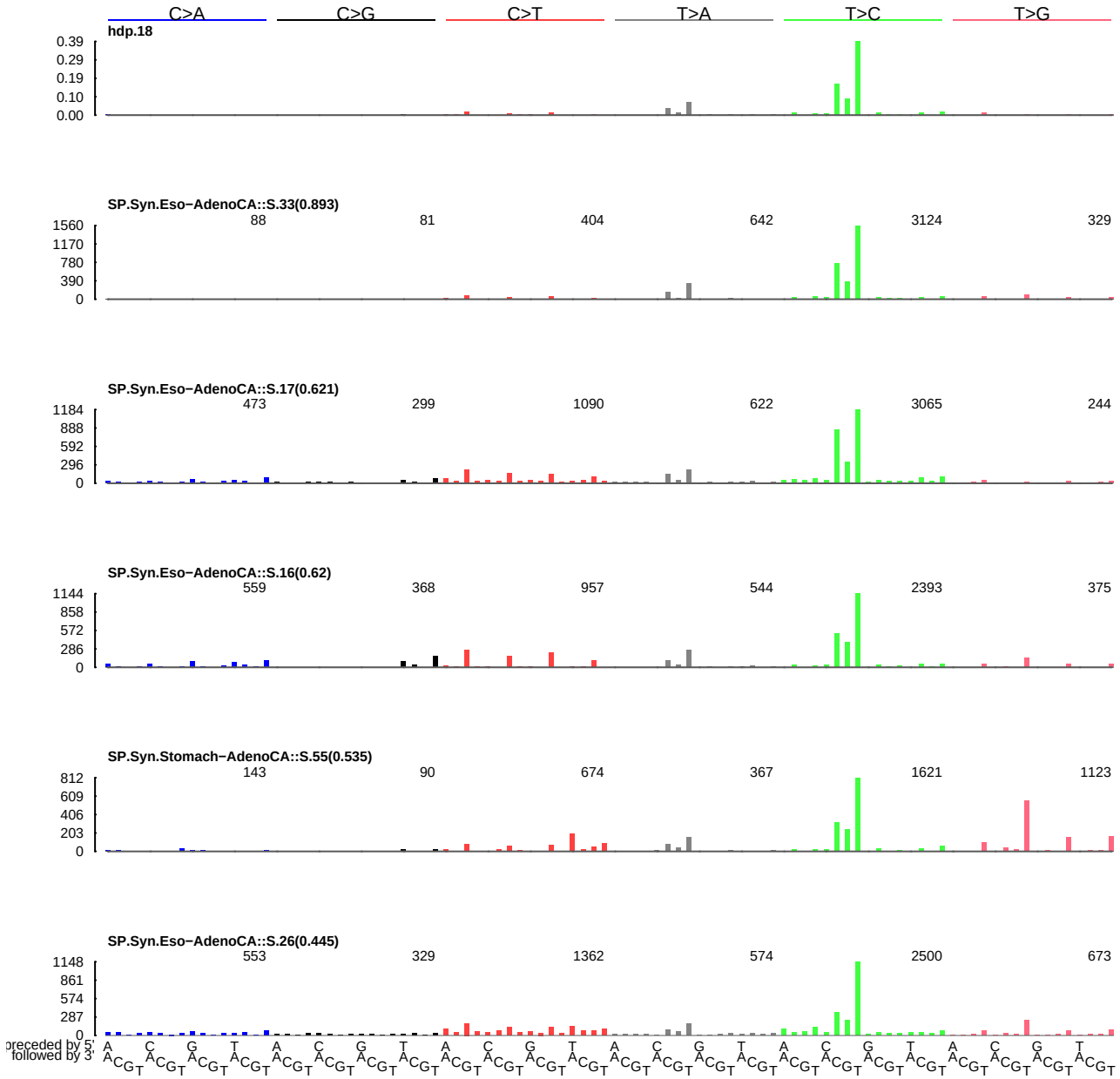

hdp.16
Proportion of exposure
0.0
0.2
0.4
0.6
0
500
1000
1500
2000
2500
3000
Exposure

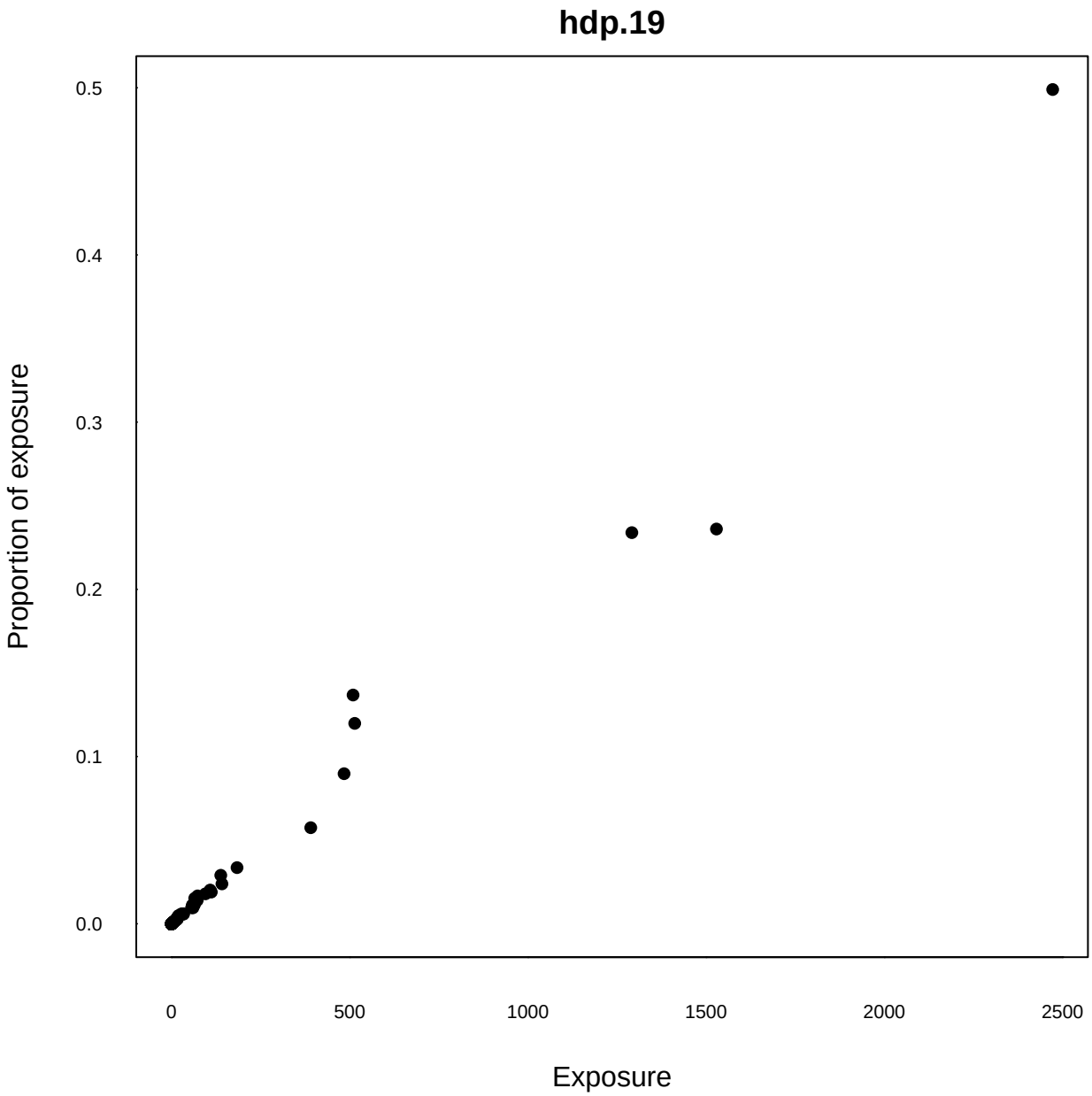

C>A
C>G
C>T
T>A
T>C
T>G
hdp.16
0.15
0.11
0.08
0.04
0.00
SP.Syn.Kidney−RCC::S.33(0.759)
266
184
576
2305
441
265
400
300
200
100
0
SP.Syn.Liver−HCC::S.52(0.269)
620
432
1121
1481
1400
332
348
261
174
87
0
SP.Syn.Liver−HCC::S.43(0.059)
707
340
903
638
2418
286
332
249
166
83
0
SP.Syn.Lung−AdenoCA::S.24(0.032)
3491
506
730
1118
397
148
468
351
234
117
0
SP.Syn.Lung−AdenoCA::S.34(0.025)
2782
1285
940
917
519
271
388
291
194
97
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

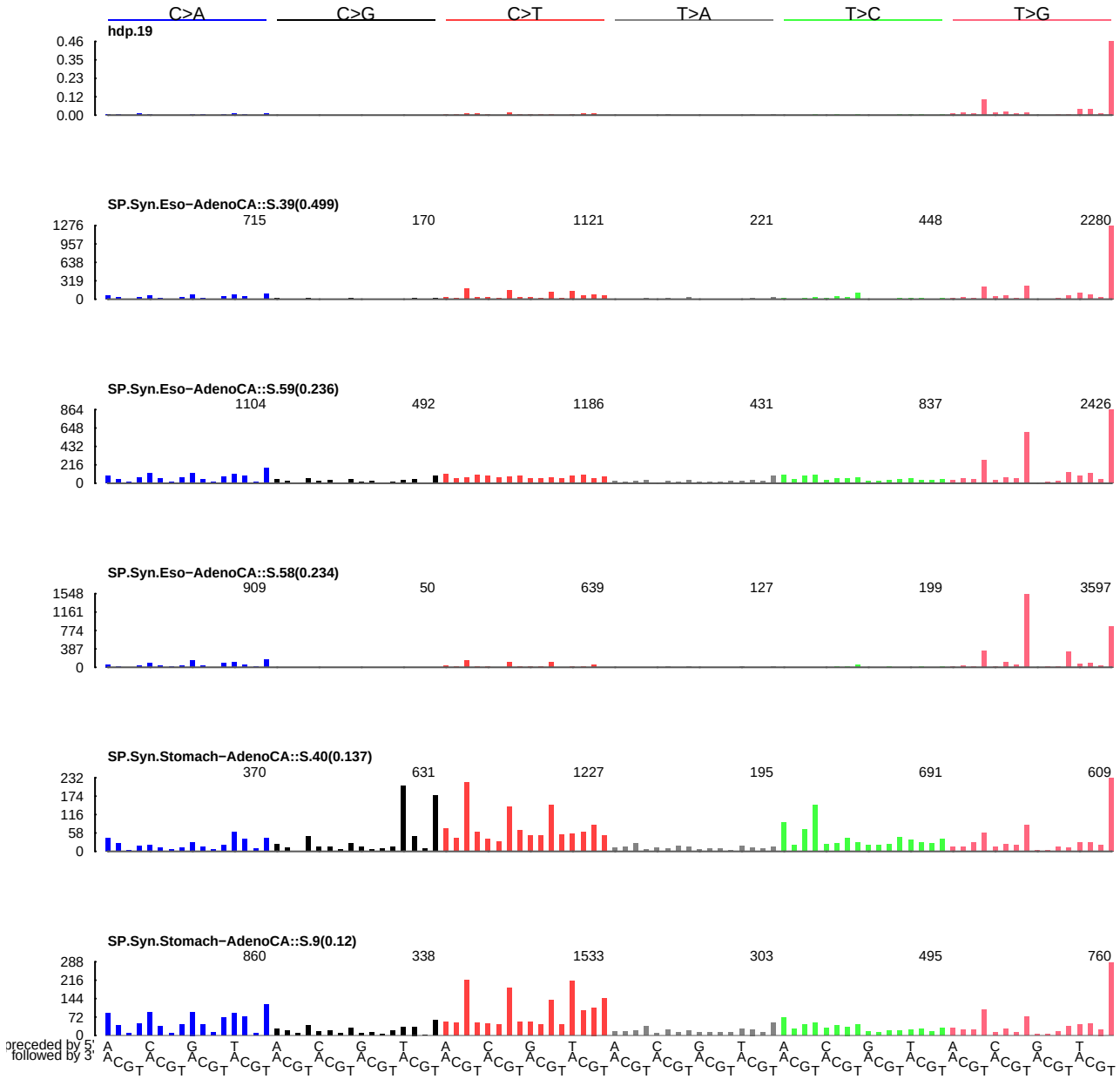

hdp.17
Proportion of exposure
0.0
0.2
0.4
0.6
0.8
0
1000
2000
3000
4000
Exposure

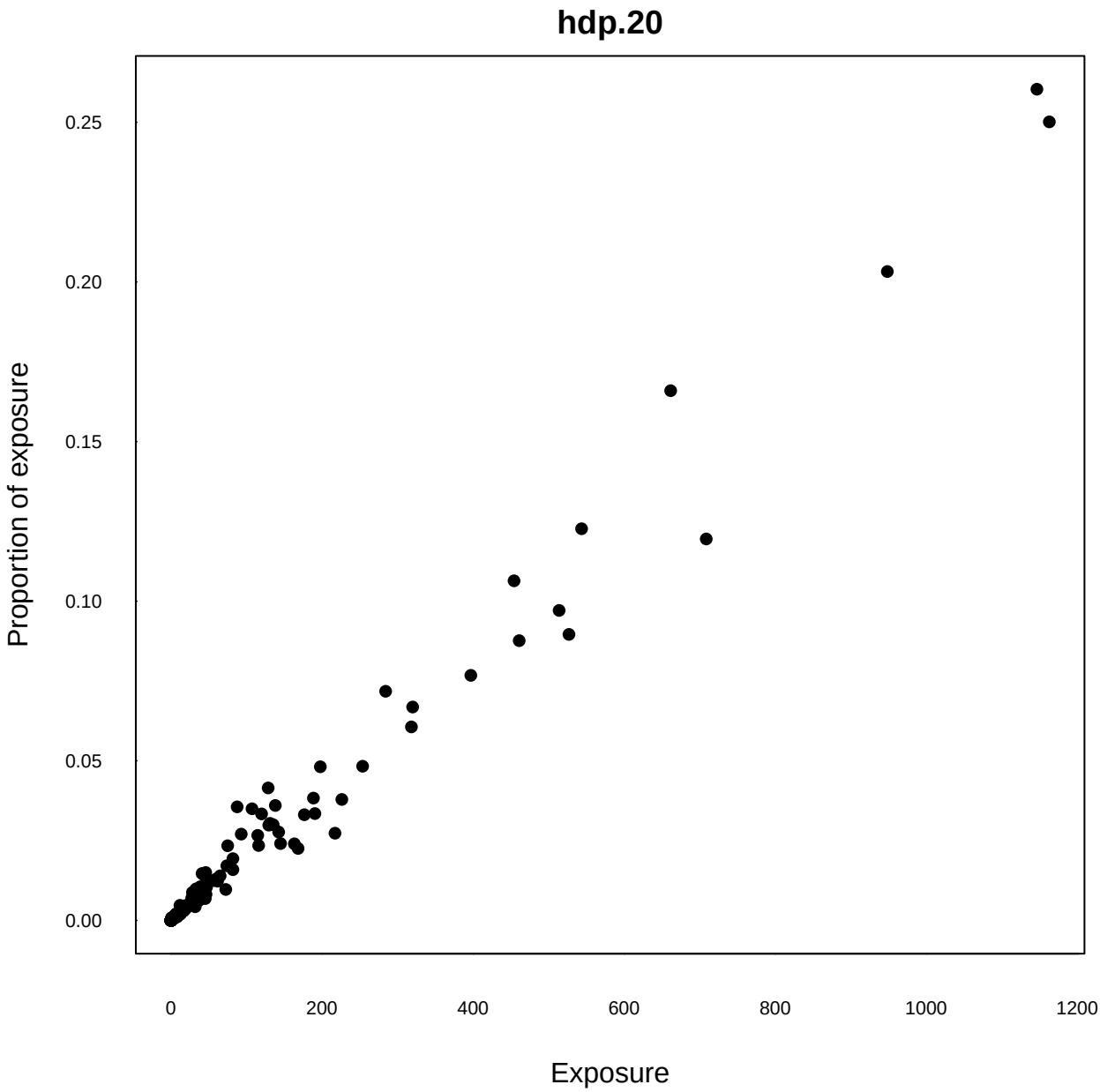

C>A
C>G
C>T
T>A
T>C
T>G
hdp.17
0.27
0.20
0.14
0.07
0.00
SP.Syn.Skin−Melanoma::S.5(0.822)
484
308
699
2448
1154
753
1128
846
564
282
0
SP.Syn.Skin−Melanoma::S.37(0.576)
532
218
1684
1691
967
395
768
576
384
192
0
SP.Syn.Skin−Melanoma::S.40(0.531)
429
253
3670
1228
908
420
752
564
376
188
0
SP.Syn.Skin−Melanoma::S.41(0.475)
246
267
3431
793
730
251
704
528
352
176
0
SP.Syn.Skin−Melanoma::S.56(0.432)
377
199
3745
1247
839
282
848
636
424
212
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T

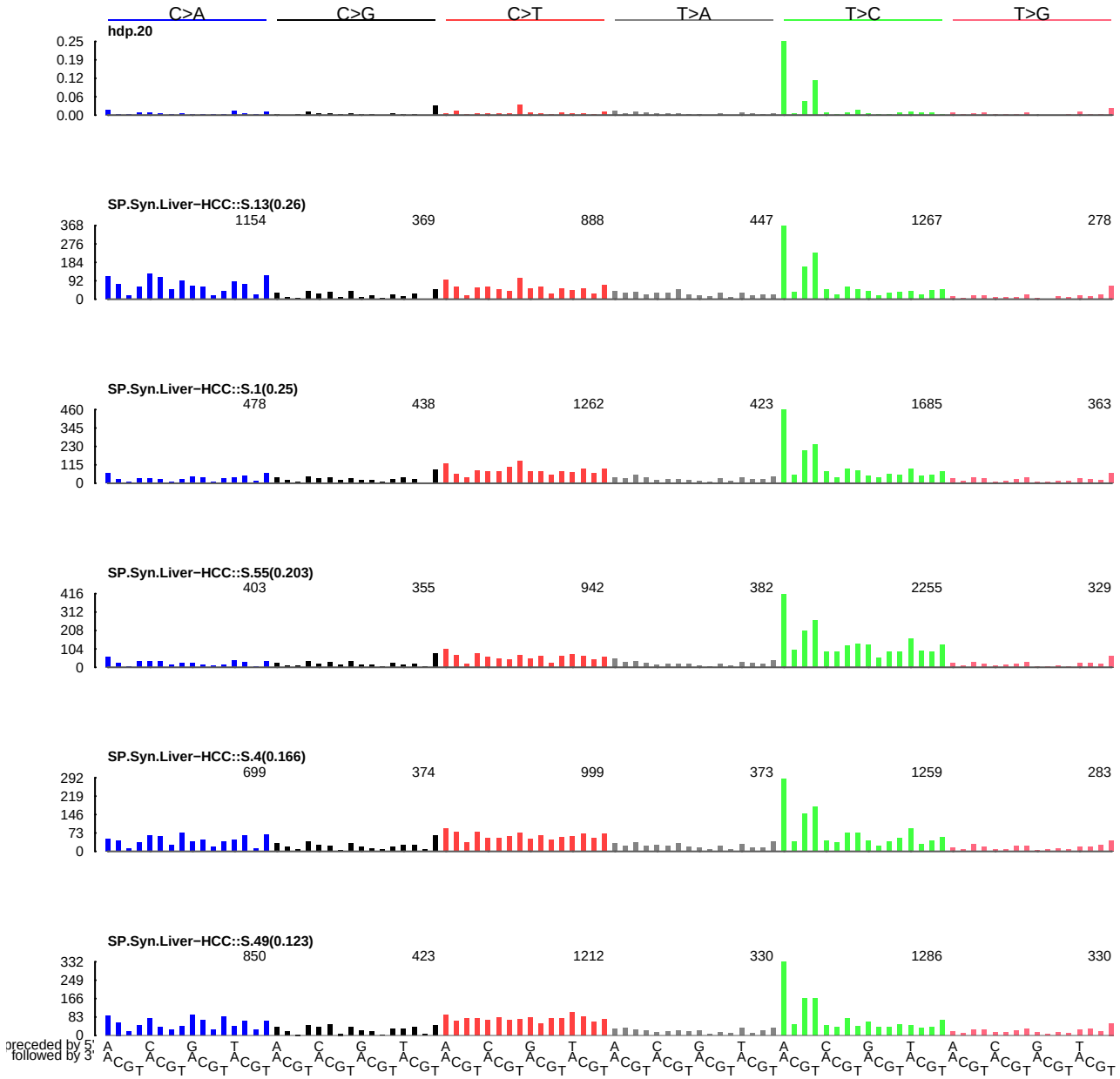

hdp.18
Proportion of exposure
0.0
0.2
0.4
0.6
0.8
0
1000
2000
3000
4000
Exposure

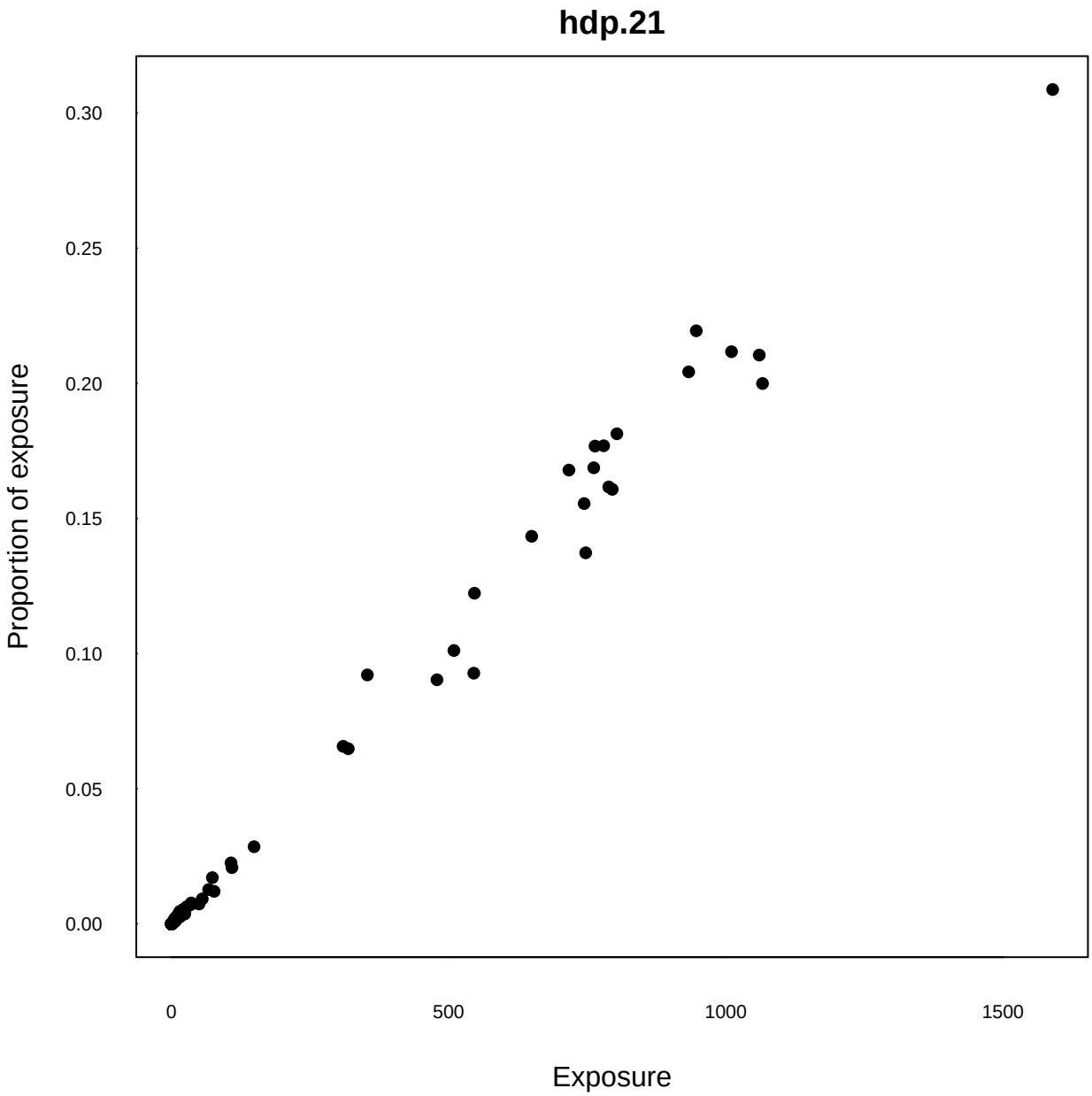

C>A
C>G
C>T
T>A
T>C
T>G
hdp.18
0.39
0.29
0.19
0.10
0.00
SP.Syn.Eso−AdenoCA::S.33(0.893)
88
81
404
642
3124
329
1560
1170
780
390
0
SP.Syn.Eso−AdenoCA::S.17(0.621)
473
299
1090
622
3065
244
1184
888
592
296
0
SP.Syn.Eso−AdenoCA::S.16(0.62)
559
368
957
544
2393
375
1144
858
572
286
0
SP.Syn.Stomach−AdenoCA::S.55(0.535)
143
90
674
367
1621
1123
812
609
406
203
0
SP.Syn.Eso−AdenoCA::S.26(0.445)
553
329
1362
574
2500
673
1148
861
574
287
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T

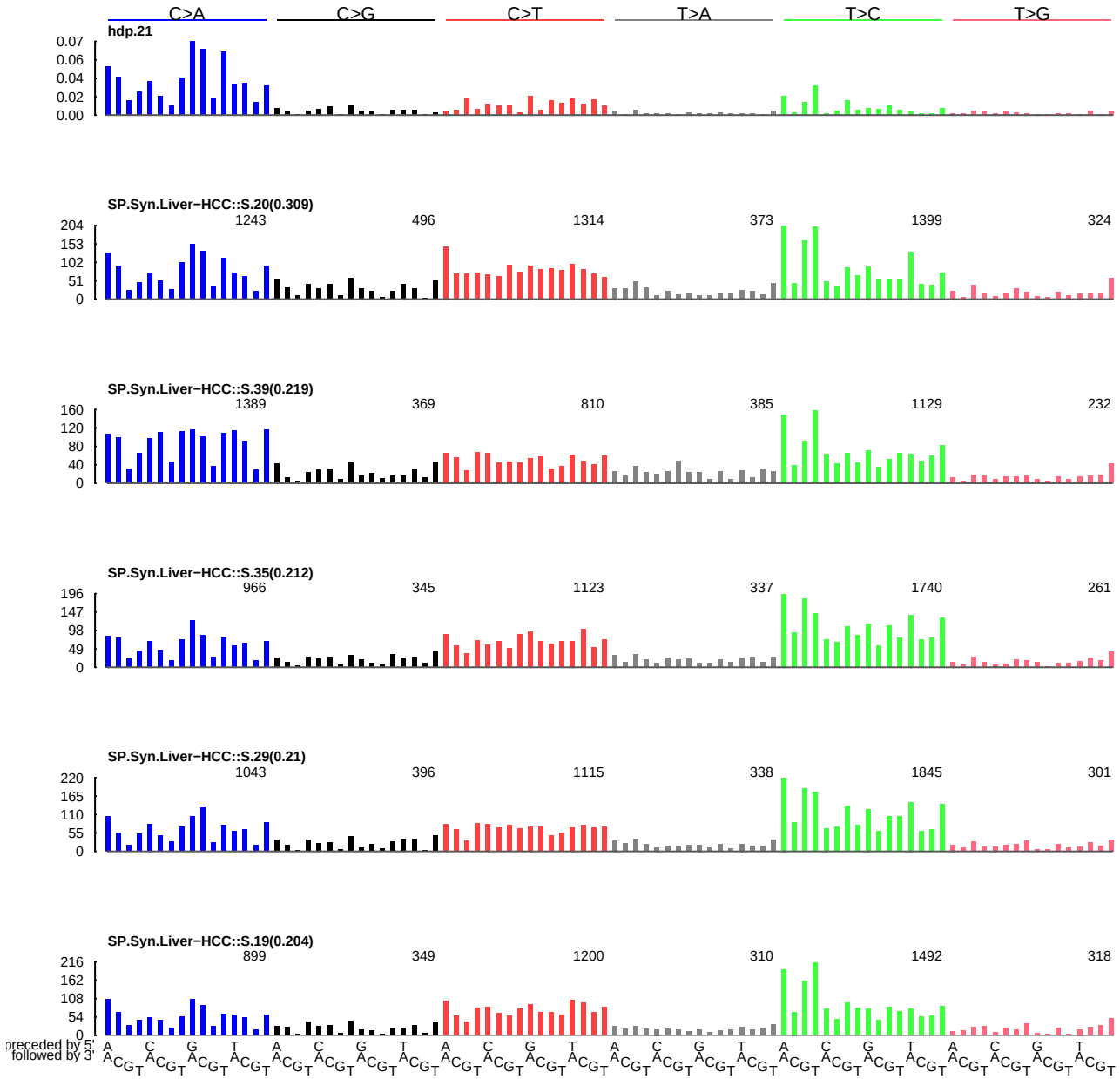

hdp.19
Proportion of exposure
0.0
0.1
0.2
0.3
0.4
0.5
0
500
1000
1500
2000
2500
Exposure


C>A
C>G
C>T
T>A
T>C
T>G
hdp.19
0.46
0.35
0.23
0.12
0.00
SP.Syn.Eso−AdenoCA::S.39(0.499)
715
170
1121
221
448
2280
1276
957
638
319
0
SP.Syn.Eso−AdenoCA::S.59(0.236)
1104
492
1186
431
837
2426
864
648
432
216
0
SP.Syn.Eso−AdenoCA::S.58(0.234)
909
50
639
127
199
3597
1548
1161
774
387
0
SP.Syn.Stomach−AdenoCA::S.40(0.137)
370
631
1227
195
691
609
232
174
116
58
0
SP.Syn.Stomach−AdenoCA::S.9(0.12)
860
338
1533
303
495
760
288
216
144
72
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T


hdp.20
Proportion of exposure
0.25
0.20
0.15
0.10
0.05
0.00
0
200
400
600
800
1000
1200
Exposure


C>A
C>G
C>T
T>A
T>C
T>G
hdp.20
0.25
0.19
0.12
0.06
0.00
SP.Syn.Liver−HCC::S.13(0.26)
1154
369
888
447
1267
278
368
276
184
92
0
SP.Syn.Liver−HCC::S.1(0.25)
478
438
1262
423
1685
363
460
345
230
115
0
SP.Syn.Liver−HCC::S.55(0.203)
403
355
942
382
2255
329
416
312
208
104
0
SP.Syn.Liver−HCC::S.4(0.166)
699
374
999
373
1259
283
292
219
146
73
0
SP.Syn.Liver−HCC::S.49(0.123)
850
423
1212
330
1286
330
332
249
166
83
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T


hdp.21
Proportion of exposure
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0
500
1000
1500
Exposure


C>A
C>G
C>T
T>A
T>C
T>G
hdp.21
0.07
0.06
0.04
0.02
0.00
SP.Syn.Liver−HCC::S.20(0.309)
1243
496
1314
373
1399
324
204
153
102
51
0
SP.Syn.Liver−HCC::S.39(0.219)
1389
369
810
385
1129
232
160
120
80
40
0
SP.Syn.Liver−HCC::S.35(0.212)
966
345
1123
337
1740
261
196
147
98
49
0
SP.Syn.Liver−HCC::S.29(0.21)
1043
396
1115
338
1845
301
220
165
110
55
0
SP.Syn.Liver−HCC::S.19(0.204)
899
349
1200
310
1492
318
216
162
108
54
0
preceded by 5'
followed by 3'
A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T A C G T