Contrast-FEL

# results summary

INPUT DATA | AlphaDeltaSpike.fas | 133 sequences | 1273 sites

Export

ContrastFEL **found evidence** of

Found 5 sites with different **Overall** dN/dS

with p-value threshold of 0.01 .

See here for more information about this method.

Please cite PMID 15703242 if you use this result in a publication, presentation, or other scientific work.

## ContrastFEL Table

Showing entries 1 through 20 out of 1273.

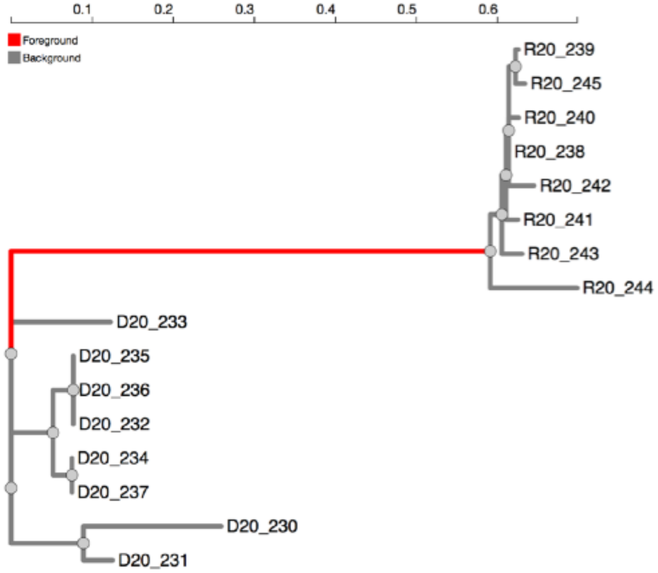
Export Table to CSV

| Site | Partition | alpha | beta (Delta) | beta (Alpha) | beta (background) | subs (Delta) | subs (Alpha) | P-value (overall) | Q-value (overall) | Permutation p-value | Te bra le |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 70 | 1 | 6.145 | 11.989 | 710.847 | 2.892 | 3.000 | 2.000 | 0.000 | 0.325 | -1.000 | 30 |
| 157 | 1 | 7.355 | 73.889 | 0.000 | 0.445 | 5.000 | 0.000 | 0.001 | 0.623 | -1.000 | 4. |
| 950 | 1 | 0.037 | 54.713 | 0.000 | 740.108 | 6.000 | 0.000 | 0.003 | 1.000 | -1.000 | 3. |
| 142 | 1 | 0.000 | 40.094 | 7.705 | 460.016 | 6.000 | 1.000 | 0.004 | 1.000 | -1.000 | 2. |
| 77 | 1 | 0.000 | 41.101 | 0.000 | 0.835 | 6.000 | 0.000 | 0.009 | 1.000 | -1.000 | 2. |

```
hyphy contrast-fel --alignment AlphaDeltaSpike.fas --tree AlphaDeltaSpike.nwk --branch-set Alpha --branch-set Delta
```

# Branch testing; exploratory vs *a priori*

- aBSREL and BUSTED can test all branches for selection (exploratory), or apply the test to a set of branches defined *a priori* (e.g. defining a particular biological hypothesis).
- For BUSTED, *a priori* partitioning of branches can increase power, especially if selective regimes are markedly different on different parts of the tree.
- For example, BUSTED applied to the HIV dataset where the transmission branch is designated as foreground, found a greater proportion sites under stronger selection on this branch that the rest of the tree (8% vs 1%), and a lower **`p-value`**.




| | Background | Foreground |
|---|---|---|
| **Class 1** | ω = 0.51<br>p = 0.08 | ω = 0.00<br>p = 0.92 |
| **Class 2** | ω = 0.72<br>p = 0.91 | |
| **Class 3** | ω = 116<br>p = 0.01 | ω = 510<br>p = 0.08 |