Table S3. Summary of growth rate parameter estimation statistics for trees with tips sampled at one point in time

<table>
<thead>
<tr>
<th></th>
<th>birth-death model trees</th>
<th></th>
<th>coalescent</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>recovered</td>
<td>HPD size</td>
<td>RMSE</td>
<td>recovered</td>
</tr>
<tr>
<td>$R_0 = 128, \lambda = 64, \delta = 0.5, \rho = 1$</td>
<td>96</td>
<td>0.463</td>
<td>0.122</td>
<td>68</td>
</tr>
<tr>
<td>$R_0 = 128, \lambda = 64, \delta = 0.5, \rho = 0.5$</td>
<td>94</td>
<td>0.390</td>
<td>0.103</td>
<td>73</td>
</tr>
<tr>
<td>$R_0 = 128, \lambda = 64, \delta = 0.5, \rho = 0.01$</td>
<td>96</td>
<td>0.164</td>
<td>0.049</td>
<td>75</td>
</tr>
<tr>
<td>$R_0 = 1.1, \lambda = 0.55, \delta = 0.5, \rho = 1$</td>
<td>95</td>
<td>2.480</td>
<td>0.665</td>
<td>70</td>
</tr>
<tr>
<td>$R_0 = 1.1, \lambda = 0.55, \delta = 0.5, \rho = 0.5$</td>
<td>96</td>
<td>1.649</td>
<td>0.535</td>
<td>63</td>
</tr>
<tr>
<td>$R_0 = 1.1, \lambda = 0.55, \delta = 0.5, \rho = 0.01$</td>
<td>91</td>
<td>0.452</td>
<td>0.131</td>
<td>73</td>
</tr>
</tbody>
</table>

For each of the 100 trees simulated under the birth-death model, with $\rho = \{1, 0.5, 0.01\}$ and $R_0 = \{128, 1.1\}$, we estimated the coverage, the 95% HPD interval sizes and the RMSE of $r$ by the birth-death model and the coalescent model, and display the summary of these measures.