Table S2: ZFTS140 dataset of 140 experimentally validated zinc finger target site sequences, used as an independent (“blind”) test set in this study. Target 5'-3' = DNA sequence of zinc finger target site; Activity Label = actual activity, determined experimentally; Prediction: activity predicted by ZiFOpT; Confidence Score = confidence in prediction, ranging from 0 (lowest) to 9 (highest); see Methods for additional details.

<table>
<thead>
<tr>
<th>Target</th>
<th>5'-3'</th>
<th>Activity Label</th>
<th>Prediction</th>
<th>Confidence Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>GGTGGAGCA</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GGTGTCGAA</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GTAGAAGAG</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GTAGCAGTC</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GTAGCTGCG</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GTCTGAGTA</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GTGGATGCT</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GTGGCAGGA</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GTGGCCGTG</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>TAATTTGGG</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>TCTGAGGAC</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>TCTGGTGAC</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>TGGGATGGA</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>TGGGGGTGA</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>TGGGGGGCA</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>TGGCTCGAC</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>TGTGACGCG</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>TGTGGGCGG</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>TTAGGGGAC</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>TGCTGAGGTA</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GACGGCAAC</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GTAGAGGTG</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GCCGGAGAC</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GCATGGGCA</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GGTGATGCT</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GCCGAAGAG</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GACGGCTGT</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GCTGAGGTA</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GAGGATGTA</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GCCGAAGTT</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GACGGAGCT</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GCTGATGGC</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GCGGTTCGA</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GACCGAGTC</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GCAGTGGA</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GGGGAAGGT</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GCCGCAATG</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GATGGTGAG</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>GTTTGGGAG</td>
<td>Active</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
</tr>
<tr>
<td>Sequence</td>
<td>Activity 1</td>
<td>Activity 2</td>
<td>Score</td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------</td>
<td>------------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>GCAGGCAGCA</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGGAGGCT</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GGGAAGAGGA</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGGAGAAC</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGGCAGGTC</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GCTGAGGGG</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GCAGAAGTA</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAAGTAAGCA</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GCTGAAACG</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GATGATGGC</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGGAAGCT</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GTGGATGCA</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GTGCAAGAAA</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>TAAAGAGGAG</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GACGGAGGA</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GATGAAGAAA</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GTAGCCGGT</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GTTTAGGAT</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GCGCCGGCC</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GTTTGACG</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGGAGGAG</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGGCCTGT</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGAGTGGAG</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGAGGGCC</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAAGAAGAG</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GCGGCGGAA</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGAGGCTA</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GCTGAGGGC</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGGACTGC</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GGGGCCGA</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGACGTCA</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>TGGGCGGAC</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGGAGAA</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAAAGCAGG</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGGATGGG</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GCAATGAGGCT</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GCTGGTGGC</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGGCCTGT</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GCTGGCGGT</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GGAGGAGAT</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GTGCGGACT</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GCTGCGGAC</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GAGGAGGAG</td>
<td>Active</td>
<td>Active</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>GGGGGAGGG</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GCGGGAGGG</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Sequence</td>
<td>Activity 1</td>
<td>Activity 2</td>
<td>Count</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>------------</td>
<td>------------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>GCTGACGGT</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GCTGAAGAA</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GCTGCAGAA</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GCTGGTGAA</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GCTGTGCAA</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GCTGTGGGG</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GGAGACGGT</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GGGCGACGGC</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GGGCAGGAA</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GGGCGAGGG</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GGGGCTGAG</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GGGAAGGGT</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GGTGAAGAG</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GTGGCAGAG</td>
<td>Active</td>
<td>Active</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>GACTTTGGT</td>
<td>Inactive</td>
<td>Active</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>GAGGCCAGCA</td>
<td>Active</td>
<td>Active</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>GAGGCCGAG</td>
<td>Active</td>
<td>Active</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>GAGGCCGGC</td>
<td>Active</td>
<td>Active</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>GAGGAGAGA</td>
<td>Active</td>
<td>Active</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>GAGGTGGGT</td>
<td>Active</td>
<td>Active</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>GCAGCAGGG</td>
<td>Active</td>
<td>Active</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>GCAGGGGGG</td>
<td>Active</td>
<td>Active</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>GCAGTGTGCT</td>
<td>Active</td>
<td>Active</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>GCCCGGGCC</td>
<td>Active</td>
<td>Active</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>GCAGCTGCC</td>
<td>Active</td>
<td>Active</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>GCAGCAGCG</td>
<td>Active</td>
<td>Active</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>GAAGGGGTGC</td>
<td>Active</td>
<td>Active</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>GAAGTGTTT</td>
<td>Active</td>
<td>Active</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>GAAGTCTGC</td>
<td>Active</td>
<td>Active</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>ACAGGAGGC</td>
<td>Active</td>
<td>Active</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>GACGACGAA</td>
<td>Active</td>
<td>Active</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>GAGGAGGTTC</td>
<td>Active</td>
<td>Active</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>GCTGGTGGC</td>
<td>Inactive</td>
<td>Active</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>TAGGAGAG</td>
<td>Inactive</td>
<td>Active</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>GCAGCGGTA</td>
<td>Inactive</td>
<td>Active</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>GTGGTGGCG</td>
<td>Inactive</td>
<td>Active</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>GAAGGGGCC</td>
<td>Active</td>
<td>Active</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>GCAGCAGCA</td>
<td>Inactive</td>
<td>Active</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GGAGTTTTT</td>
<td>Inactive</td>
<td>Active</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GTCTGAGCA</td>
<td>Inactive</td>
<td>Active</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GGGTTTGGC</td>
<td>Inactive</td>
<td>Active</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>GTGTATGAA</td>
<td>Inactive</td>
<td>Active</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GTCAGCTGTA</td>
<td>Inactive</td>
<td>Active</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GCTTAGGTT</td>
<td>Inactive</td>
<td>Active</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CGGTTTGGAG</td>
<td>Inactive</td>
<td>Active</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>GTCGCTGTC</td>
<td>Inactive</td>
<td>Active</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sequence</td>
<td>Activity 1</td>
<td>Activity 2</td>
<td>Value</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>------------</td>
<td>------------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>TCTGGAGAT</td>
<td>Inactive</td>
<td>Inactive</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>TGTGAATGT</td>
<td>Inactive</td>
<td>Inactive</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>GCCGGAGCA</td>
<td>Inactive</td>
<td>Active</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>GGTHTTGAG</td>
<td>Inactive</td>
<td>Active</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>