Gene list specified by researchers

Full-length cDNA data
Whole genome data
User-defined motif list
Known cis-element candidates list
MEME program

Upstream region sequences

Motifs preliminarily listed
- Palindrome
- Direct Repeat
- Inverse Repeat
(ex: ACGTGT)

ACGTGT...ACGTGT
ACGTGT...ACACGT
ACACGT...ACACGT
(etc.)

List of combined motifs

Preliminary cis-element candidates list

Association Rule Analysis
If Y is not frequent on the whole but occurs frequently in association with X, then X and Y must be related.

A Fictional Example:

<table>
<thead>
<tr>
<th></th>
<th>Y</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>8</td>
<td>176</td>
<td>184</td>
</tr>
<tr>
<td>No</td>
<td>1003</td>
<td>19322</td>
<td>20325</td>
</tr>
</tbody>
</table>

Support = \frac{8}{20509} = 0.00039

Confidence = \frac{8}{184} = 0.04348

Lift = \frac{0.00039}{(184/20509)(1011/20509)} = 0.88199

RiceCyc

AGRIS

Gene Ontology

OUTPUT