Probabilistic connectivity mapping

Transcriptional *in vitro* drug-treatment profiles

<table>
<thead>
<tr>
<th>drugs</th>
<th>cell lines</th>
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<tbody>
<tr>
<td></td>
<td>HL60</td>
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<tr>
<td>genes</td>
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</tbody>
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Probabilistic modelling with Group Factor Analysis

Factors $(Z)$

Factor loadings $(W^T)$

Cell lines

Relevance measure

Factors $(Z)$

drug A: $z_A$

relevance(A, B) = $cor(z_A, z_B)$

drug B: $z_B$