Development of Synthetic Biology Tools to More Predictably Clone, Express and Select Biocatalytic Activities for Metabolic Pathway Optimization and High Yield Biomolecule Production

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IB Catalyst Engineering Focused Workshop – Manchester, UK
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Capabilities:

- Strain construction/protein expression/enzyme evolution
- Microbial fermentation (5L)/cell culture (2L) – to large scale
- Bioprocess development, DSP, synthetic chemistry
- Synbio/enabling tech. tools development e.g. inABLE®

Customers:

- Chemical companies looking to source capabilities in micro/molecular biology and bioprocess development for the production of biobased chemicals/biofuels
- Therapeutics companies looking to outsource application of synthetic biology for natural product pathway and protein engineering/optimization
- Academics looking to transition early stage research through POC and on to spinout/startup in human therapeutics
<table>
<thead>
<tr>
<th>BioSystem Challenge</th>
<th>Ingenza SynBio Tools/Needs</th>
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<tbody>
<tr>
<td><strong>Genome operating environment</strong></td>
<td>Genome integration “landing pad” technology</td>
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<tr>
<td><strong>Gene expression control processes</strong></td>
<td>Genome editing</td>
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<tr>
<td><strong>Gene design/engineering “rules”</strong></td>
<td>Protein eng., tRNA trafficking &amp; protein folding modeling/selection</td>
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<td><strong>System performance improvement</strong></td>
<td>Metabolomics/transcriptomics-driven bioengineering</td>
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<td><strong>Gene expression components</strong></td>
<td>Synthetic expression elements</td>
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<tr>
<td><strong>Genome construction/engineering</strong></td>
<td>inAble® combinatorial genetic platform</td>
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