

1 **Supporting Information**

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3 **A Versatile Transcription Factor Biosensor System Responsive to Multiple**
4 **Aromatic and Indole Inducers**

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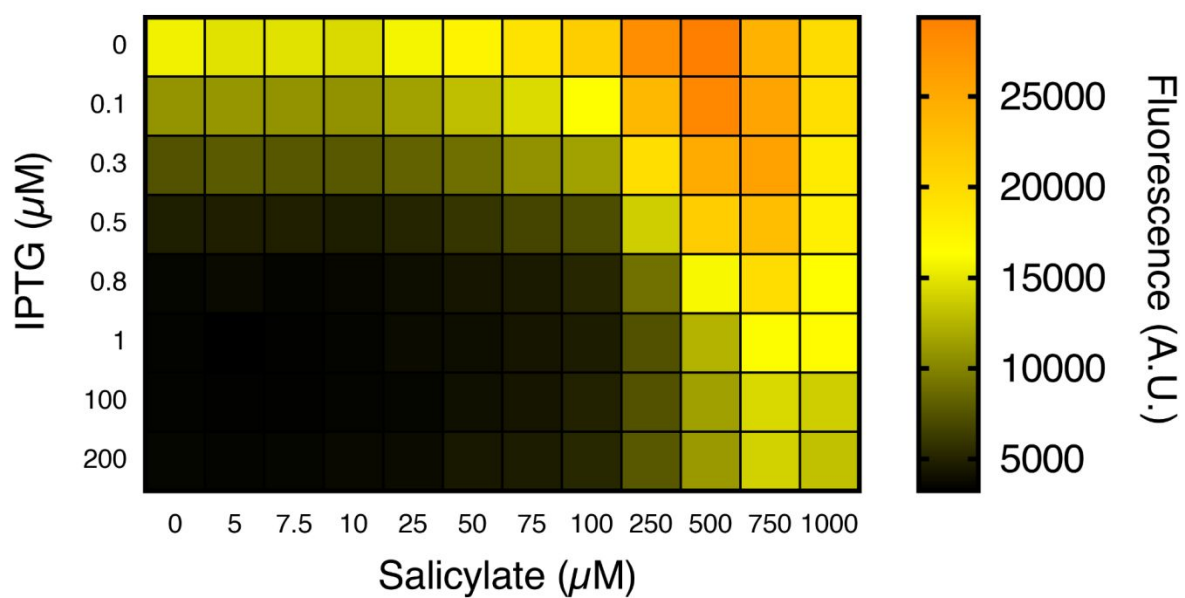
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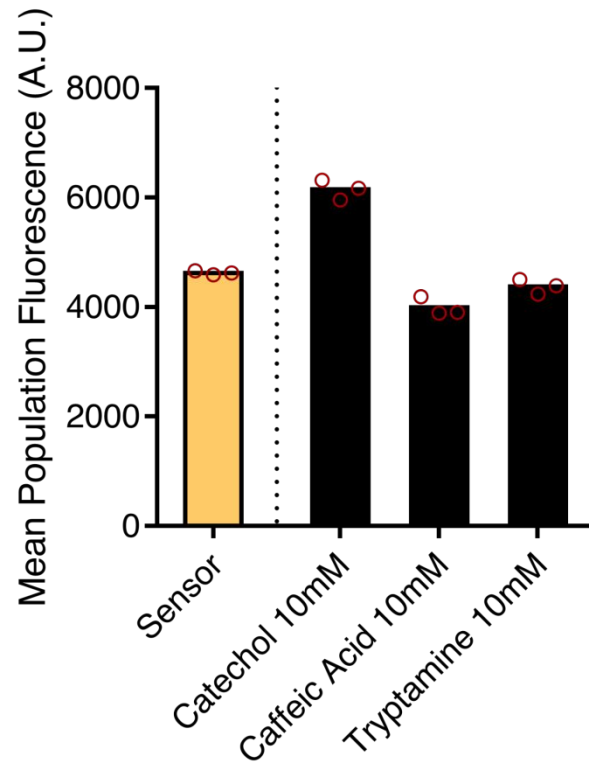


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22 **Supplementary Figure 1:** Tunable promoter output by measuring whole-cell GFP fluorescence using a
 23 plate reader at varying concentrations of IPTG (0-200 μM) and salicylate (0-1000 μM).

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27 **Supplementary Figure 2:** Fluorescence measurements of the sensor strain exposed to 10 mM each of
28 catechol, caffeic acid, and tryptamine.

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31 **Supplementary table 1:**

Gene(s):

<i>cmeR</i> (codon-optimized for <i>S. cerevisiae</i> expression)	<p>ATGAACAGTAACAGGACACCTTCTCAGAAGGTGTTAGCTAGGCAAGAAAAAATTAAA</p> <p>GCAGTCGCTTTAGAGCTGTTTCTGACAAAGGGCTACCAAGAAACCAGCCTATCAGAT</p> <p>ATTATTAATTGTCTGGAGGTTCCATTCCAATATCTACGATGGATTCAAATCTAAAGA</p> <p>GGGGTTGTTTTTCGAAATTTAGACGATATATGCAAGAAACACTTTCATTTGATTTACT</p> <p>CTAAGACACAAGAAATTGAGAACGGTACCCTAAAGGAGATTCTAACAAGCTTCGGAC</p> <p>TGGCTTTCATTGAAATCTCAACCAGCCGGAAGCAGTCGCGTTTGGTAAAAATAATTTA</p> <p>CAGTCAAGTTTATGATAAGGACCGTCACCTTGCAAATTGGATCGAAAACAATCAGCA</p> <p>AAATTTCTCCTATAATATCTTAATGGGCTTCTTCAAACAACAGAACAACAGTTACATGA</p> <p>AAAAGAACGCTGAGAAATTAGCAGTGCTTTTCTGTACTATGTTAAAGGAACCATATCA</p> <p>TCATCTTAACGTCTTGATCAATGCACCACTAAAAACAAAAAGAGCAAAAAGGAACAC</p> <p>GTGGAGTTCGTCGTCAATGTATTCTGAACGGAATAAATCCAGTAAGGCATAA</p>
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Oligonucleotides for *E. coli* work:

1 (insert pipe Fwd)	TGATAGAGGACAACACTACTAGATGAACAGTAACAGGACACC
2 (insert pipe Rv)	GTAAACAGGTGAAACTGACTTATGCCTTACTGGAATTTA
3 (Vector pipe Fwd)	TAAATTCCAGTAAGGCATAAGTCAGTTTCACCTGTTTTAC
4 (Vector pipe Rv)	GGTGCCTGTTACTGTTTCATCTAGTAGTTGCCTCTATCA
5 (<i>cmeO</i> Fwd)	TGTAATAAATATTACACTGTCACCGGATGTGCTTTC
6 (<i>cmeO</i> Rv)	TGTAATATTTATTACATACTAAAGTAGGACTGAGCTAGC
7 (-10 Fwd)	TATAATTGTAATAAATATTACACTGTCACCGGATGT
8 (-10 Rv)	ATTATAAGTAGGACTGAGCTAGCTGTCAATT
9 (Y203T Fwd)	CGACAACCACTACCTTAGCACCCAGTCCGCCCTGAGCAAAG

10 (Y203T Rv)	CTTTGCTCAGGGCGGACTGGGTGCTAAGGTAGTGGTTGTCCG
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Promoter(s) for *E. coli* experiments:

P ₂	GGTATGGAAGCTATACGTTACCAATTGACAGCTAGCTCAGTCCTACTTATAATGTAA
(-35) (-10) (operator)	TAAATATTACA

Parts for *S. cerevisiae* experiments:

Upstream homology+linker (site FgF16)	<p>ttcgtgaaacacgtgggataccggtaggtaataattacagtttccttacactactaaatacgcacagagcatgttattaatc gatatattaagtaataataacgtattgaccattcctaagactgaagcagtaccaagaatggcactttttgttatgacatagta aaagtgtcattggcagaaaacaagggtatctggatactgcaatcctcattagttgaggagagctttttaaagttttactctg ataatgcttctccagaactggcgcgactgaagccataaactgagtggtgtccctgtgtatattctacaatcgcctattga aactctgggtgataatcgatttagcgattgggttctccctctgagattctggataaatgagatgctaccctcacagtaaaaa cagtacaaaacctttgtatagttctagcaaatgaactcctcattcatggattgtatactattgttctgtgaaagattcctctgt gattttcatgggtatttaagcctttttattgaaagaattaaatattcactaggctgagatacagatacagaacgaagtgattgaa acccgaattaacggaaggaataactctgaataaaaacaacttatataataaaaaatgc</p>
P _{TDH3}	<p>Tcgagttatcattatcaataactgccatttcaagaatacgtaaataataatagtagtgattttcctaactttatttagtcaaaaaat tagccttttaattctgctgaaccggtacatgccaaaatagggggcgggttacacagaatataacatcgtaggtgtctgggt gaacagtttattcctggcatccactaaataatggagcccgttttaagctggcatccagaaaaaaaaagaatcccagcac caaaatattgtttctcaccacatcagttcataggtcattctcttagcgcaactacagagaaacaggggcacaaacaggc aaaaaacgggcacaacctcaatggagtgatgcaacctgctggagtaaatgatgacacaaggcaattgaccacgcatg tatctatctcttttctacaccttctattaccttctgctctctgattggaaaaagctgaaaaaaaaagggtgaaaccagttccctg aaattattcccctactgactaataagtatataaagacggtaggtattgattgtaattctgtaaatctatttctaaacttctaaattct actttatagtagtcttttttagtttaaacaccaagaacttagtttcaAAAAACA</p>

<i>T_{ENO}</i>	<p> agtgctttaactaagaattattagctttctgcttattttcatcatagtttagaacactttatattaacgaatagttatgaatctattta ggttataaaattgatacagttttataagtfacttttcaaagactcgtgctgtctattgcataatgcactggaaggggaaaaaaa ggtgcacacgctggcttttctgaattgacgtttgaaaaataactacatggatgataagaaaacatggagtacagtcacttt gagaacctcaatcagctggaacgtcttcgtaattggatactcaaaaaagatggatagcatgaatcacaagatggaagga aatgcggggccacgaccacagtgatgcatatgggagatggagatgatacct </p>
Linker	<p>ccggtcttagaaaacgcataaacatacaagtgacagatg</p>
<i>P_{CCW12}</i>	<p> cacccatgaaccacacggttagtccaaaaggggcagttcagattccagatgcggaattagctgtgccaccctcacctca ctaacgctgcggtgtgcggatactcatgctattatagacgcgctgtcggaatcagcacgcgcaagaaccaaaggaa aatcggaatgggtccagaactgcttgagtctggctattggcgtctgattccggtttgggaatcctttgccgcgccccctca aaactccgcacaagtcccagaagcgggaaagaaataaaacgccaccccccccccccccccccccccccccccccccccc aagcgtgggtgtagccctggattatcccgtaacagatattctcaggagtaaaaaaccggtttggaattcccatttcgc ggccacctacgcccgtatctttgaacaactatctgcgataactcagcaattttgcatattcgtgttcagattgagataatg gagtcttactccaacataacggcagaaagaaatgtgagaaaatttgcacctttgcctccgttcaagtataaagtcggcat gcttgataatctttcttccatcctacattgttctaattattcttattctcctttattcttcttaacataccaagaaattaatcttctgcatc gcttaaacactatatcaataaAAAACA </p>
<i>P_{CCW12} – cmeO</i> (<i>P_{CCW120}</i>)	<p> cacccatgaaccacacggttagtccaaaaggggcagttcagattccagatgcggaattagctgtgccaccctcacctca ctaacgctgcggtgtgcggatactcatgctattatagacgcgctgtcggaatcagcacgcgcaagaaccaaaggaa aatcggaatgggtccagaactgcttgagtctggctattggcgtctgattccggtttgggaatcctttgccgcgccccctca aaactccgcacaagtcccagaagcgggaaagaaataaaacgccaccccccccccccccccccccccccccccccccccc aagcgtgggtgtagccctggattatcccgtaacagatattctcaggagtaaaaaaccggtttggaattcccatttcgc ggccacctacgcccgtatctttgaacaactatctgcgataactcagcaattttgcatattcgtgttcagattgagataatg gagtcttactccaacataacggcagaaagaaatgtgagaaaatttgcacctttgcctccgttcaagtataaagtcggcat gcTGTAAATAAATATTACATGTAATAAATATTACA atcttctgcatcgttaaacactatatcaataaAAAACA </p>

<i>Envy GFP</i>	Atgtctaaggcgaggaattgtttacaggtgtagttcctatgttggctgaactagatggagatgtcaacggcataagtttctgta cggggtgaaggcgaaggtgatgctactaattggcaaaactgactctgaagttcatctgtacgaccgaaaattgccagttccatg gcctacattagtaacaacattatgttacggagttcaatgctttgtagataccagatcacatgaagcagcatgacttttcaaa agtgctatgccagaaggtatgtgcaggagagaactatccttcaaagatgatggtactataagacaagagcagaggtaa agttgaaggcgatacattggtaataagaattgagcttaaaggcattgattttaaggaagatgggaatatcctcggacataaac ttgaatacaattcaattcacataatgtttatcacagcagataaacaagaatggataaaagcgaacttaagacaaga cataacgtggaagatggtagcgtccaattagccgaccattaccaaaaaacactcctatcggggacgggccagttctcctc cagacaaccactacatcaaccaatctgttctatctaaagaccctaatgaaaaacgagatcacatggtctgttagagttcg tgactgccgctgtataacattaggaatggacgaattgtacaataa
<i>T_{ADH1}</i>	tggacttctcggcagaggttggcaagtccaatcaagggtgctgcttctacctgcccagaaattacgaaaagatgga aaagggtcaaatcgttggtagatcgttggacacttcaataagcgaatttctatgattatgattttattataaataagttat aaaaaaaaataaggtatacaaaatftaaagtgactcttagttttaaacgaaaattcttattctgagtaactcttctgtaggtc aggtgtcttctcaggtatagcatgaggtcgtcttattgaccacacctaccggcatgc
Downstream homology+linker (site FgF16)	cctcttattacatcaaaataagaaaataattataacatgcctacgcaacacttagctgcttttttaagcagcggcagatga ggatttaaataacgcataaccaagaataacctaataagatgaaggtatacaggctgttctatggactgaataatactggcta ccctggcgtcctaattgctgtaagaaagtaactgatcagattaatcacaactggccacaaaataccacttatctcatata atctaaatcgtactaaaggtgtaggcacggaactcggacactagaggtattgctcaatgtatatttcaatggttcatctag gtaagcaaggcctgaataatatacttaactctgtctgttgcgaacaattgctgagtacaataatgtggaataaaaatcaacta tcatctactaactagtttactgttagtataattatcatatacgggttagaagatgacgcaaatgatgagaaatagcatctaa attagtggaagctgaaacgaaggattgataatgtaataggatcaatgaatattaacataaaaatgatgataataatattata gaattgtgataattgcagattccctttatggattcctaatacctcggaggagaacttctagtatatctacatacctaattatagc cttaatcacaatggaatccaacaa

Oligos for *S. cerevisiae* experiments:

MN642 (cmeR Rv with <i>T_{ENO2}</i> overhang)	aataagcagaaaagactaataattcttagttaaagcactTTATGCCTTACTGGAATTTATTCCGTT
MN720 (cmeR Fwd with <i>P_{TDH3}</i> overhang)	tttagttttaaacaaccaagaacttagttcgaAAAACAATGAACAGTAACAGGACACCTTCTCA
MN644 (<i>T_{ENO2}</i> Fwd with cmeR overhang)	CAATGTATTCTGAACGGAATAAATTCCAGTAAGGCATAAagtgtttaaactaagaattattagct

MN863 (P_{TDH3} Rv)	TCGAAACTAAGTTCTTGGTGTTTTAAAC
Payge120 (TDH3 Fwd with linker overhang)	aggaataactctgaataaaacaactatataataaaaatgctcgagttatcattatcaatact
MN663 (P_{CCW12} cmeo Fwd)	TGTAATAAATATTACATGTAATAAATATTACAttcttattctcttattcttcttaacatac
MN664 (P_{CCW12} cmeo Rv)	TGTAATATTTATTACATGTAATATTTATTACAgcatgccgactttatatacttgaacg
MN527 (P_{CCW12} Fwd with linker overhang)	Ccggcttagaaaacgcataaacatacaagtgacagatgcacccatgaaccacacgg
MN516 (P_{CCW12} Rv envy overhang)	TAGGAACTACACCTGTAACAATTCTCGCCTTTAGACATTGTTTTtattgatatagtttaag cgaatgacaga
Payge67 (T_{ENO2} Rv)	CATCTGTCCACTTGTATGTTTATGCGTTTTCTAAGACCGGaggtatcatctccatctcc
MN694 (FgF16 up Fwd)	ttcgtgaaacacgtgggataccggtaggtaatat
GC2952 (FgF16 up Rv)	gcattttattatataagtgtttattcagagtattcctccgtaattcgggttcaa
GC2953 (FgF16 down Fwd)	cctcttatattacataaaataagaaaataattataacatgcctacgcaacacttagc
MN695 (FgF 16 down Rv)	ttgtgggattccattgtgattaaggctataatattaggtatgt
T_{ADH1} Fwd	CGCTGGTATAACATTAGGAATGGACGAATTGTACAAATAAtggacttctcgccagaggt
T_{ADH1} Rv	TGTTATAATTATTTTCTTATTTTGATGTAATATAAAGAGGgcatgccgtagag
MN966 (gRNA oligo annealing Fwd)	TCCTCGCTGGCGCCGCTGGGCAACACCTTCGGGTGGCGAATGGGACTTTCGTAG ATTCCTATATCCTAC
MN967 (gRNA oligo annealing Rv)	GTTGATAACGGACTAGCCTTATTTAACTTGCTATTTCTAGCTCTAAAACGTAGGATA TAGGAATCTACG
MN523 (envy Fwd)	aattaatcttctgtcattcgcttaaacactatatcaataaAAAACAATGTCTAAAGGCGAGGAATTG
Envy Rv with adh1 overhang	ttgattggagacttgaccaaacctctggcgaagaagtccaTTATTTGTACAATTCGTCCATTCTCA