

Appendix III: Characterized Chimeras

Table AIII-1. Functional chimeras (third column in MIC in $\mu\text{g}/\text{mL}$ of ampicillin for each chimera) from naïve RASPP:PST library, 111 total sequences. The sequences are designated by their block pattern: 1 represents PSE-4, 2 SED-1, and 3 TEM-1. A chimera's freezer stock location is in the first column and the sequence is determined by the sequences of the parental genes in the following blocks: (Ambler standard numbering) 1-65, 66-73, 74-149, 150-161, 162-176, 177-190, 191-218, 219-290.

11E10	1	1	2	1	3	3	3	3	10	12F6	2	3	3	2	2	3	3	2	2000
10E4	1	1	3	1	1	1	3	3	10	4E4	2	3	3	2	3	2	1	2	25
18C9	1	1	3	1	2	3	3	1	10	9B9	2	3	3	2	3	3	2	2	2000
4A4	1	1	3	1	3	1	3	3	1000	2B3	2	3	3	3	1	2	3	2	100
17F11	1	1	3	1	3	3	3	1	25	9E10	2	3	3	3	2	2	2	2	2000
10F8	1	1	3	1	3	3	3	3	50	10C8	2	3	3	3	2	3	3	2	500
20D2	1	1	3	3	1	3	3	1	25	11C8	2	3	3	3	3	1	1	2	1000
4D7	1	1	3	3	2	1	3	3	1000	2H6	2	3	3	3	3	1	3	2	100
20F8	1	1	3	3	2	3	3	1	100	12B3	2	3	3	3	3	2	1	2	250
11F6	1	1	3	3	2	3	3	3	1000	2C9	2	3	3	3	3	2	2	2	1000
10D12	1	1	3	3	3	1	3	3	500	11E6	2	3	3	3	3	3	2	2	2000
20B12	1	1	3	3	3	2	3	1	100	10F1	2	3	3	3	3	3	3	2	500
20D7	1	1	3	3	3	3	3	3	100	4H9	3	1	1	1	2	3	3	3	1000
20C4	1	2	3	1	2	1	3	1	10	2B9	3	1	1	3	3	3	3	3	1000
1F2	1	2	3	2	3	3	2	2	10	12E3	3	1	2	2	2	1	3	2	100
18G12	1	2	3	3	2	1	3	1	10	12H8	3	1	3	1	1	1	3	3	2000
20C12	1	2	3	3	3	1	2	1	10	1E2	3	1	3	1	1	3	1	3	50
4E1	1	3	2	2	3	2	3	2	100	10D8	3	1	3	1	1	3	3	3	500
18E6	1	3	2	3	3	3	3	3	10	11A11	3	1	3	1	2	1	3	3	2000
20H7	1	3	3	1	1	3	3	3	25	1G4	3	1	3	1	2	2	3	3	500
17C4	1	3	3	1	2	3	3	3	50	10B12	3	1	3	1	2	3	3	3	2000
10H11	1	3	3	1	3	3	3	3	100	9C3	3	1	3	1	3	1	1	3	500
10D9	1	3	3	2	2	2	3	3	500	10F12	3	1	3	1	3	2	3	3	2000
20B11	1	3	3	3	2	2	3	3	2000	11B11	3	1	3	1	3	3	3	3	2000
10C3	1	3	3	3	2	3	3	3	250	2E8	3	1	3	2	2	3	3	3	1000
2F1	1	3	3	3	3	2	3	3	1000	3B5	3	1	3	2	3	2	2	3	1000
18A7	1	3	3	3	3	3	3	3	500	20G5	3	1	3	2	3	2	3	3	2000
4H4	2	1	3	1	3	1	3	2	1000	10G12	3	1	3	2	3	3	3	3	1000
2C8	2	1	3	1	3	2	2	2	1000	20H9	3	1	3	3	1	3	1	3	25
3B7	2	1	3	1	3	2	3	2	1000	18H3	3	1	3	3	1	3	3	3	1000
12F11	2	1	3	1	3	3	2	2	2000	18H4	3	1	3	3	2	2	3	3	25
3C11	2	1	3	2	1	1	3	2	1000	11G11	3	1	3	3	2	3	1	3	1000
9C4	2	1	3	2	2	1	3	2	2000	3H7	3	1	3	3	2	3	3	3	1000
1B9	2	1	3	2	2	3	2	2	1000	1D12	3	1	3	3	3	2	3	3	1000
4G3	2	1	3	2	3	2	2	2	1000	11D3	3	1	3	3	3	3	3	3	2000
1B8	2	1	3	2	3	2	3	2	1000	9F1	3	2	3	1	2	3	3	3	50

Table AIII-2. Nonfunctional chimeras from the naïve library described for Table AIII-1.

2C10	1	1	1	1	1	2	2	2	0
12F3	1	1	1	1	2	2	1	2	0
10A10	1	1	1	1	2	3	3	2	0
9D12	1	1	1	1	3	2	3	2	0
4A5	1	1	1	1	3	3	1	2	0
10F6	1	1	1	2	1	1	3	2	0
11A6	1	1	1	2	1	2	2	3	0
4C10	1	1	1	2	1	3	1	2	0
1H1	1	1	1	2	1	3	2	2	0
20A7	1	1	1	2	1	3	3	3	0
11B4	1	1	1	2	2	2	1	2	0
20B7	1	1	1	2	2	3	3	2	0
1E8	1	1	1	2	3	2	1	2	0
3B10	1	1	1	2	3	3	1	2	0
3D10	1	1	1	3	1	1	3	3	0
12C11	1	1	1	3	1	3	3	2	0
2B10	1	1	1	3	1	3	3	3	0
1D3	1	1	1	3	2	1	3	3	0
19H2	1	1	1	3	2	3	3	3	0
1F5	1	1	1	3	3	2	2	2	0
3E8	1	1	1	3	3	3	2	2	0
11G3	1	1	1	3	3	3	3	2	0
9B8	1	1	2	1	1	1	3	2	0
2G2	1	1	2	1	1	3	3	3	0
9F3	1	1	2	1	2	3	1	2	0
9G8	1	1	2	1	3	3	3	2	0
12D10	1	1	2	2	1	3	1	3	0
20B10	1	1	2	2	1	3	2	2	0
19E7	1	1	2	2	1	3	3	3	0
20E11	1	1	2	2	2	2	3	3	0
12F2	1	1	2	2	2	3	3	2	0
3F2	1	1	2	2	3	2	2	2	0
10H5	1	1	2	2	3	3	1	2	0
10B6	1	1	2	2	3	3	3	2	0
2A5	1	1	2	2	3	3	3	3	0
17H11	1	1	2	3	1	1	3	2	0
18E5	1	1	2	3	2	3	3	2	0
11C5	1	1	2	3	3	1	3	2	0
11H10	1	1	2	3	3	3	1	2	0
1H10	1	1	2	3	3	3	3	2	0
18G8	1	1	2	3	3	3	3	3	0
12F10	1	1	3	1	1	2	3	2	0
10A4	1	1	3	1	1	3	2	2	0
4D2	1	1	3	1	1	3	3	2	0
18G4	1	1	3	1	1	3	3	3	0
2D4	1	1	3	1	2	3	1	2	0
2E4	1	1	3	1	2	3	3	2	0
19H3	1	1	3	1	2	3	3	3	0
4A2	1	1	3	1	3	1	1	2	0
12A4	1	1	3	1	3	2	2	2	0
2E6	1	1	3	1	3	2	3	2	0
11C9	1	1	3	1	3	3	1	2	0
4G6	1	1	3	1	3	3	2	2	0
11C2	1	1	3	1	3	3	3	2	0
3H8	1	1	3	2	1	1	3	2	0
12C6	1	1	3	2	1	3	3	2	0
20F7	1	1	3	2	1	3	3	3	0
11F10	1	1	3	2	2	3	1	2	0
17E7	1	1	3	2	2	3	3	1	0
18F1	1	1	3	2	2	3	3	2	0
2E1	1	1	3	2	3	1	3	2	0
9G3	1	1	3	2	3	1	3	3	0
10F10	1	1	3	2	3	2	1	3	0
3E6	1	1	3	2	3	2	2	2	0
10H2	1	1	3	2	3	2	3	2	0
11D7	1	1	3	2	3	3	1	2	0
11H9	1	1	3	2	3	3	2	2	0
10F4	1	1	3	2	3	3	3	2	0
19H5	1	1	3	2	3	3	3	3	0
9F10	1	1	3	3	1	1	1	2	0
12F1	1	1	3	3	1	1	1	3	0
19H4	1	1	3	3	1	1	3	3	0
1G11	1	1	3	3	1	2	1	2	0
4C12	1	1	3	3	1	2	3	2	0
10D5	1	1	3	3	1	3	1	2	0
1F7	1	1	3	3	1	3	3	2	0
17C7	1	1	3	3	1	3	3	3	0
17D4	1	1	3	3	2	1	3	1	0
19E2	1	1	3	3	2	1	3	2	0
1C7	1	1	3	3	2	3	2	2	0
10A12	1	1	3	3	2	3	3	2	0
2G4	1	1	3	3	3	1	1	2	0
10A7	1	1	3	3	3	1	3	2	0
4H8	1	1	3	3	3	2	1	2	0
1F12	1	1	3	3	3	2	2	2	0
10G6	1	1	3	3	3	2	3	2	0
1E5	1	1	3	3	3	3	1	2	0
1D5	1	1	3	3	3	3	2	2	0
10A6	1	1	3	3	3	3	3	2	0
12C10	1	2	1	1	3	3	3	2	0
19C11	1	2	1	2	1	3	3	3	0
12B8	1	2	1	2	2	3	3	2	0
20F3	1	2	1	2	2	3	3	3	0
4A10	1	2	1	2	3	1	3	2	0
10F2	1	2	1	2	3	2	3	2	0
11G4	1	2	1	2	3	3	2	2	0
12E11	1	2	1	2	3	3	3	2	0
1B2	1	2	1	2	3	3	3	3	0
2F9	1	2	1	3	1	3	2	3	0
19C12	1	2	1	3	1	3	3	3	0

10H8	1	2	1	3	2	3	2	2	0	1H11	1	2	3	3	2	2	3	2	0
11A3	1	2	1	3	3	1	3	2	0	19A6	1	2	3	3	2	3	3	1	0
11F9	1	2	1	3	3	2	3	3	0	11E5	1	2	3	3	2	3	3	2	0
4G9	1	2	1	3	3	3	3	2	0	17F8	1	2	3	3	2	3	3	3	0
2C5	1	2	2	1	1	3	2	2	0	10C5	1	2	3	3	3	1	3	2	0
3E3	1	2	2	1	1	3	3	2	0	12E4	1	2	3	3	3	3	1	2	0
2D9	1	2	2	1	1	3	3	3	0	9C9	1	2	3	3	3	3	3	2	0
1H6	1	2	2	1	2	1	3	3	0	1B6	1	3	1	1	1	2	3	3	0
12E1	1	2	2	1	2	2	3	3	0	11D5	1	3	1	2	2	3	1	3	0
17F9	1	2	2	1	2	3	3	1	0	12G2	1	3	1	2	3	2	3	2	0
12C7	1	2	2	1	2	3	3	3	0	2G12	1	3	1	2	3	3	3	2	0
11H5	1	2	2	1	3	1	3	2	0	10E11	1	3	1	3	1	2	1	2	0
9H8	1	2	2	2	1	2	3	2	0	4F4	1	3	1	3	1	3	3	3	0
1D8	1	2	2	2	2	3	2	2	0	10C10	1	3	1	3	2	2	1	2	0
11B2	1	2	2	2	3	3	1	2	0	17H3	1	3	1	3	2	3	3	3	0
10H10	1	2	2	2	3	3	3	2	0	3A11	1	3	1	3	3	1	3	2	0
9E8	1	2	2	3	1	2	1	2	0	20G10	1	3	1	3	3	3	3	2	0
18D11	1	2	2	3	1	3	3	3	0	18G3	1	3	1	3	3	3	3	3	0
18D9	1	2	2	3	2	3	3	3	0	12H5	1	3	2	1	2	2	3	3	0
12D5	1	2	2	3	3	1	1	2	0	3D6	1	3	2	1	3	3	1	2	0
11C12	1	2	2	3	3	3	1	2	0	10G10	1	3	2	1	3	3	3	2	0
3D7	1	2	2	3	3	3	2	2	0	9E7	1	3	2	2	1	1	1	3	0
1H8	1	2	2	3	3	3	3	2	0	18A5	1	3	2	2	1	1	3	2	0
12H6	1	2	3	1	1	1	2	2	0	12E5	1	3	2	2	2	2	1	3	0
20E5	1	2	3	1	1	1	3	1	0	11G8	1	3	2	2	2	2	3	3	0
19B12	1	2	3	1	1	1	3	3	0	2E12	1	3	2	2	3	1	3	2	0
18E9	1	2	3	1	1	2	3	3	0	3B8	1	3	2	2	3	3	3	2	0
12B10	1	2	3	1	1	3	3	2	0	20B5	1	3	2	3	1	2	2	3	0
20B8	1	2	3	1	1	3	3	3	0	12D4	1	3	2	3	1	2	3	3	0
20F4	1	2	3	1	2	1	3	2	0	18G9	1	3	2	3	1	3	3	2	0
10E9	1	2	3	1	2	2	3	3	0	11D11	1	3	2	3	1	3	3	3	0
18F3	1	2	3	1	2	3	3	1	0	9H9	1	3	2	3	2	3	3	2	0
12A6	1	2	3	1	3	1	3	2	0	11D8	1	3	2	3	2	3	3	3	0
10G8	1	2	3	1	3	2	1	2	0	2D7	1	3	2	3	3	2	3	3	0
12A2	1	2	3	1	3	2	2	2	0	1C10	1	3	2	3	3	3	3	2	0
10C12	1	2	3	1	3	2	3	2	0	2E2	1	3	3	1	1	1	1	2	0
3C2	1	2	3	1	3	2	3	3	0	11C7	1	3	3	1	1	1	2	3	0
11F5	1	2	3	1	3	3	1	2	0	9H4	1	3	3	1	1	1	3	2	0
10A9	1	2	3	1	3	3	2	2	0	11H11	1	3	3	1	1	2	3	2	0
9C5	1	2	3	1	3	3	2	3	0	17F5	1	3	3	1	1	3	2	3	0
1D10	1	2	3	1	3	3	3	2	0	19C7	1	3	3	1	1	3	3	1	0
4G7	1	2	3	2	1	3	3	1	0	4G1	1	3	3	1	1	3	3	2	0
11H3	1	2	3	2	1	3	3	3	0	20C2	1	3	3	1	2	1	3	1	0
17H4	1	2	3	2	2	3	3	3	0	12C3	1	3	3	1	2	1	3	2	0
1F8	1	2	3	2	3	1	3	2	0	1G2	1	3	3	1	2	2	2	3	0
2F2	1	2	3	2	3	2	1	2	0	19F11	1	3	3	1	2	3	1	2	0
10B8	1	2	3	3	1	1	2	3	0	9B3	1	3	3	1	3	1	1	2	0
11B9	1	2	3	3	1	3	1	3	0	9D10	1	3	3	1	3	1	2	2	0
17D2	1	2	3	3	1	3	3	3	0	2B2	1	3	3	1	3	2	1	2	0
1E1	1	2	3	3	2	2	2	2	0	9A3	1	3	3	1	3	3	1	2	0

11F4	1	3	3	1	3	3	2	2	0
2A2	1	3	3	1	3	3	2	3	0
1H7	1	3	3	1	3	3	3	2	0
18E12	1	3	3	2	1	3	3	1	0
4G8	1	3	3	2	2	3	3	3	0
2A7	1	3	3	2	3	3	1	2	0
20E7	1	3	3	3	1	2	3	1	0
4F8	1	3	3	3	1	2	3	2	0
10G4	1	3	3	3	1	3	1	2	0
17E2	1	3	3	3	1	3	3	1	0
12G12	1	3	3	3	1	3	3	2	0
2H4	1	3	3	3	1	3	3	3	0
4C4	1	3	3	3	2	1	2	2	0
18E1	1	3	3	3	2	1	3	3	0
1B3	1	3	3	3	2	2	1	2	0
2D10	1	3	3	3	2	2	2	2	0
10F7	1	3	3	3	2	2	3	2	0
3H9	1	3	3	3	2	3	1	2	0
1D2	1	3	3	3	2	3	2	3	0
2B8	1	3	3	3	3	1	1	2	0
9G10	1	3	3	3	3	1	3	2	0
1B5	1	3	3	3	3	2	1	2	0
2A9	1	3	3	3	3	2	3	2	0
1G7	1	3	3	3	3	3	2	2	0
10F5	1	3	3	3	3	3	2	3	0
1D9	1	3	3	3	3	3	3	2	0
17A2	2	1	1	3	1	3	3	1	0
11G12	2	1	1	3	3	2	3	2	0
2F7	2	1	1	3	3	3	3	2	0
1F1	2	1	2	1	1	3	3	2	0
4A8	2	1	2	1	2	2	3	3	0
2E10	2	1	2	1	3	3	3	2	0
17G8	2	1	2	3	1	3	3	1	0
19B6	2	1	2	3	1	3	3	2	0
19G12	2	1	2	3	2	3	3	3	0
1C6	2	1	2	3	3	1	1	2	0
11F7	2	1	2	3	3	3	1	2	0
10A2	2	1	2	3	3	3	3	2	0
17C9	2	1	3	1	1	3	1	1	0
10D3	2	1	3	1	1	3	3	3	0
4E3	2	1	3	1	2	2	1	3	0
18B2	2	1	3	1	2	3	3	1	0
9G7	2	1	3	1	3	3	1	2	0
9B2	2	1	3	1	3	3	3	3	0
12D3	2	1	3	3	1	1	3	2	0
11G1	2	1	3	3	1	2	3	2	0
12H3	2	1	3	3	1	3	1	2	0
17D8	2	1	3	3	1	3	2	1	0
19A10	2	1	3	3	1	3	3	1	0
19G11	2	1	3	3	2	1	3	3	0

20D8	2	1	3	3	2	3	1	3	0
17G10	2	1	3	3	2	3	3	3	0
18F12	2	2	1	1	3	3	3	2	0
20C7	2	2	1	2	2	3	3	2	0
20B6	2	2	1	3	1	3	3	3	0
10D7	2	2	1	3	3	1	3	2	0
19D11	2	2	2	2	2	3	3	3	0
20B3	2	2	2	3	2	3	3	3	0
4C2	2	2	2	3	3	1	1	2	0
1E3	2	2	3	1	1	3	2	2	0
10F3	2	2	3	1	1	3	3	2	0
19B3	2	2	3	1	1	3	3	3	0
20E1	2	2	3	1	2	3	3	3	0
3E9	2	2	3	1	3	3	3	2	0
4D3	2	2	3	2	3	1	2	2	0
10B10	2	2	3	3	1	3	3	3	0
12F9	2	2	3	3	2	3	1	2	0
3G8	2	2	3	3	2	3	2	3	0
20E9	2	2	3	3	2	3	3	1	0
20C3	2	2	3	3	2	3	3	2	0
10B9	2	2	3	3	3	1	3	2	0
4B2	2	2	3	3	3	2	1	3	0
3D9	2	2	3	3	3	2	3	2	0
17D7	2	2	3	3	3	3	2	3	0
1D4	2	2	3	3	3	3	3	2	0
3F10	2	2	3	3	3	3	3	3	0
2B4	2	3	1	3	2	3	3	2	0
9D5	2	3	1	3	3	3	2	1	0
11E1	2	3	1	3	3	3	2	2	0
4H6	2	3	1	3	3	3	2	3	0
4A7	2	3	2	1	2	3	1	3	0
10B3	2	3	2	1	3	1	1	2	0
2G8	2	3	2	1	3	2	2	2	0
3C12	2	3	2	2	1	3	3	2	0
17H10	2	3	2	2	1	3	3	3	0
3B4	2	3	2	2	2	3	3	2	0
17D5	2	3	2	2	2	3	3	3	0
9G5	2	3	2	2	3	2	1	2	0
9A10	2	3	2	2	3	3	3	3	0
2B12	2	3	3	1	1	3	3	2	0
20B9	2	3	3	3	2	1	3	1	0
1E6	2	3	3	3	3	3	1	2	0
3A12	3	1	1	1	1	2	1	2	0
4A12	3	1	1	1	1	3	3	3	0
4F1	3	1	1	1	3	2	1	2	0
11D12	3	1	1	1	3	2	3	2	0
3C7	3	1	1	1	3	3	1	2	0
2E9	3	1	1	1	3	3	2	2	0
17F3	3	1	1	2	1	2	1	3	0
17A12	3	1	1	2	1	3	3	2	0

2F3	3	1	1	2	2	1	1	3	0
3H1	3	1	1	2	3	1	3	3	0
11A10	3	1	1	2	3	3	3	2	0
18A4	3	1	1	2	3	3	3	3	0
11B12	3	1	1	3	3	1	3	2	0
9H7	3	1	1	3	3	3	3	2	0
9D3	3	1	2	1	1	2	1	3	0
11G5	3	1	2	1	2	2	3	2	0
18F11	3	1	2	1	2	3	3	2	0
3G4	3	1	2	1	3	3	2	2	0
3H3	3	1	2	1	3	3	3	2	0
10G3	3	1	2	1	3	3	3	3	0
4E7	3	1	2	2	2	3	2	2	0
12C4	3	1	2	2	3	1	3	2	0
9E1	3	1	2	2	3	1	3	3	0
10D6	3	1	2	2	3	3	2	2	0
12B12	3	1	2	2	3	3	3	2	0
17G3	3	1	2	3	1	3	1	2	0
18B7	3	1	2	3	2	3	3	3	0
10H6	3	1	2	3	3	1	2	2	0
12B11	3	1	2	3	3	1	3	2	0
9F6	3	1	2	3	3	3	1	2	0
11E2	3	1	2	3	3	3	2	2	0
2C7	3	1	2	3	3	3	3	3	0
11B6	3	1	3	1	1	1	2	2	0
9F4	3	1	3	1	1	2	2	2	0
18C2	3	1	3	1	1	3	1	2	0
10C7	3	1	3	1	1	3	2	3	0
12A11	3	1	3	1	1	3	3	2	0
11H6	3	1	3	1	2	1	3	2	0
18C10	3	1	3	1	2	3	3	2	0
11H8	3	1	3	1	3	1	2	2	0
11B8	3	1	3	1	3	1	3	2	0
2B11	3	1	3	1	3	2	3	2	0
12F8	3	1	3	1	3	3	1	2	0
12D8	3	1	3	1	3	3	3	2	0
18D8	3	1	3	2	1	3	3	2	0
12E10	3	1	3	2	2	2	1	2	0
2C3	3	1	3	2	2	3	1	2	0
1A11	3	1	3	2	3	1	1	2	0
11G9	3	1	3	2	3	1	3	2	0
12A8	3	1	3	2	3	2	3	2	0
2G7	3	1	3	2	3	3	3	2	0
3F4	3	1	3	3	1	1	2	2	0
20G1	3	1	3	3	1	1	3	2	0
4G5	3	1	3	3	1	3	3	2	0
4A6	3	1	3	3	2	1	1	2	0
12B5	3	1	3	3	2	3	2	2	0
11D10	3	1	3	3	3	3	2	2	0
11F1	3	1	3	3	3	3	3	2	0

12H4	3	2	1	1	1	1	1	3	0
18C7	3	2	1	2	2	3	3	2	0
4B9	3	2	1	2	2	3	3	3	0
12F12	3	2	1	2	3	2	1	2	0
3F6	3	2	1	2	3	2	3	2	0
1F11	3	2	1	2	3	3	3	3	0
10G7	3	2	1	3	3	2	3	2	0
4F7	3	2	1	3	3	2	3	3	0
1C3	3	2	1	3	3	3	3	2	0
9F5	3	2	2	1	3	3	3	2	0
12B9	3	2	2	2	1	2	3	2	0
18D2	3	2	2	2	1	3	3	2	0
12B6	3	2	2	2	2	2	3	3	0
4E11	3	2	2	2	2	3	1	2	0
10E12	3	2	2	2	2	3	3	2	0
12A3	3	2	2	2	2	3	3	3	0
12D6	3	2	2	2	3	3	2	2	0
12G10	3	2	2	2	3	3	3	2	0
2C11	3	2	2	2	3	3	3	3	0
10H3	3	2	2	3	1	3	3	2	0
11D4	3	2	3	1	1	1	2	2	0
12C8	3	2	3	1	1	1	2	3	0
9E2	3	2	3	1	1	2	3	2	0
3A10	3	2	3	1	1	2	3	3	0
10H4	3	2	3	1	2	3	1	2	0
11A2	3	2	3	1	2	3	2	2	0
18G11	3	2	3	1	2	3	3	2	0
2C4	3	2	3	1	3	1	2	2	0
12F7	3	2	3	1	3	1	3	2	0
3D2	3	2	3	1	3	2	2	2	0
19D12	3	2	3	1	3	2	3	2	0
12A10	3	2	3	1	3	3	1	2	0
10A11	3	2	3	1	3	3	3	2	0
3B9	3	2	3	2	1	1	3	2	0
1H9	3	2	3	2	1	2	2	2	0
11F2	3	2	3	2	1	2	2	3	0
1H3	3	2	3	2	1	3	3	3	0
9D7	3	2	3	2	2	1	3	2	0
10A3	3	2	3	2	2	3	2	2	0
20G8	3	2	3	2	2	3	3	1	0
12E12	3	2	3	2	2	3	3	2	0
11C11	3	2	3	2	2	3	3	3	0
10E7	3	2	3	2	3	1	2	2	0
1B10	3	2	3	2	3	2	1	2	0
10E10	3	2	3	2	3	2	2	2	0
1E12	3	2	3	2	3	3	2	2	0
11E7	3	2	3	2	3	3	3	2	0
11D2	3	2	3	3	1	3	1	2	0
12E2	3	2	3	3	1	3	3	3	0
4C5	3	2	3	3	3	3	2	2	0

Table AIII-3. Functional lactamase chimeras selected on ampicillin prior to probe hybridization. Not part of the naïve library, but from the RASPP:PST library. The third column in the MIC for ampicillin in $\mu\text{g/mL}$.

23A11	1	1	3	1	2	1	3	3	100
24D11	1	1	3	3	1	2	3	1	50
23D12	1	1	3	3	2	2	3	1	50
21F6	1	1	3	3	2	2	3	3	50
21A5	1	1	3	3	3	2	3	3	100
24A10	1	1	3	3	3	3	3	1	2000
23A6	1	3	3	1	1	1	3	3	50
24G4	1	3	3	1	2	1	3	3	500
23B7	1	3	3	1	3	1	3	3	500
21C2	1	3	3	2	1	2	3	3	100
22F12	1	3	3	2	2	3	3	2	100
22A10	2	1	3	1	2	1	3	2	500
22B2	2	1	3	1	2	3	3	2	1000
21A4	2	1	3	1	3	3	3	2	250
21G11	2	1	3	3	1	3	3	3	250
24A6	2	1	3	3	2	2	2	2	1000
24D8	2	1	3	3	3	1	2	2	50
22B8	2	2	2	2	2	2	2	2	2000
23B6	2	2	3	1	3	3	1	2	1000
23G12	2	3	1	3	2	3	3	3	1000
24C7	2	3	3	1	3	1	1	2	250
23E1	2	3	3	1	3	1	3	2	10
21C8	2	3	3	1	3	2	3	2	500
23E7	2	3	3	1	3	3	2	2	1000
21C3	2	3	3	2	1	2	3	2	250
22B7	2	3	3	2	2	2	2	2	2000
22C7	2	3	3	2	3	2	2	2	2000
21F5	2	3	3	2	3	2	3	2	1000
22A2	2	3	3	2	3	3	3	2	500
23H5	2	3	3	3	1	2	2	2	2000
24F4	2	3	3	3	2	2	1	2	50
22B5	2	3	3	3	2	2	3	2	500
22A6	2	3	3	3	3	1	2	2	2000
21G4	2	3	3	3	3	2	3	2	500
24A7	3	1	1	1	3	3	3	3	500
24D12	3	1	3	1	1	2	3	3	1000
24G10	3	1	3	1	1	3	3	1	2000
23F5	3	1	3	1	3	1	1	2	500
21D6	3	1	3	1	3	1	3	3	2000
24D3	3	2	2	1	3	3	1	2	500
22E9	3	2	3	1	1	1	3	3	50
21A3	3	2	3	2	1	2	3	3	50
21D12	3	2	3	2	2	2	3	3	250
22E1	3	2	3	3	3	3	3	3	100
21H4	3	3	3	1	2	2	1	3	500
22A11	3	3	3	1	2	2	3	3	2000
22C6	3	3	3	1	2	3	1	2	50
24A8	3	3	3	1	3	2	3	3	2000
22D8	3	3	3	2	2	2	3	3	2000
22F3	3	3	3	2	3	3	3	3	200
21C9	3	3	3	3	1	2	3	3	2000

Table AIII-4. Cytochrome P450 naïve chimeras (third column, 1 for functional, 0 for nonfunctional, 2 for P420 peak counted as nonfunctional) from naïve library, 628 total sequences. The sequences are designated by their block pattern: 1 represents CYP102A1, 2, CYP102A2, and 3, CYP102A3. A chimeras sequence is determined by the sequences of the parental genes in the following blocks: 1-64, 65-122, 123-166, 166-216, 216-268, 269-328, 329-404, 405-460 (Otey et al. 2006).

1	1	1	1	2	1	2	3	0
1	1	1	1	2	2	1	2	1
1	1	1	1	3	2	2	3	0
1	1	1	1	3	2	3	3	1
1	1	1	3	1	3	1	3	1
1	1	1	3	2	2	2	3	0
1	1	1	3	2	2	3	2	0
1	1	1	3	2	3	2	3	0
1	1	2	1	3	1	3	3	1
1	1	2	3	1	2	3	2	0
1	1	2	3	2	1	1	1	0
1	1	2	3	2	3	2	3	0
1	1	2	3	2	3	3	3	1
1	1	3	1	2	2	3	3	1
1	1	3	1	3	2	2	3	2
1	1	3	3	1	1	2	3	0
1	1	3	3	2	2	2	1	0
1	1	3	3	2	3	3	3	1
1	1	3	3	3	1	2	2	0
1	1	3	3	3	2	1	2	1
1	1	3	3	3	3	2	3	2
1	2	1	3	3	2	2	3	0
1	2	2	1	1	2	2	2	0
1	2	2	1	2	1	1	2	1
1	2	2	1	2	2	1	1	0
1	2	2	1	2	2	2	3	2
1	2	2	3	1	2	3	1	0
1	2	2	3	2	1	1	1	2
1	2	2	3	3	1	1	2	0
1	2	2	3	3	3	2	3	0
1	2	3	1	1	3	3	3	1
1	2	3	3	1	1	2	3	1
1	2	3	3	1	2	1	1	0
1	2	3	3	1	2	2	1	2
1	2	3	3	2	1	2	3	2
1	2	3	3	2	2	2	3	1
1	2	3	3	2	3	3	3	1
1	2	3	3	3	3	3	1	1
1	3	1	3	2	2	2	3	0
2	3	3	1	3	2	3	2	1
2	3	3	1	3	3	2	2	2
2	3	3	3	1	1	1	2	0
2	3	3	3	1	2	1	2	0
2	3	3	3	1	2	3	2	0
2	3	3	3	1	3	2	3	1
2	3	3	3	2	2	2	2	1
2	3	3	3	2	3	1	1	1
2	3	3	3	2	3	2	2	0
2	3	3	3	2	3	2	3	1
2	3	3	3	3	1	1	1	1
2	3	3	3	3	1	2	2	2
2	3	3	3	3	1	2	3	1
2	3	3	3	3	2	1	1	1
2	3	3	3	3	2	2	2	1
2	3	3	3	3	2	2	3	0
2	3	3	3	3	2	3	2	1
2	3	3	3	3	2	3	3	1
2	3	3	3	3	3	2	3	1
3	1	1	1	1	2	3	3	1
3	1	1	1	2	1	2	1	0
3	1	1	1	3	1	3	2	1
3	1	1	1	3	3	2	1	0
3	1	1	1	3	3	2	3	1
3	1	1	1	3	3	3	2	1
3	1	1	3	1	2	3	3	1
3	1	1	3	1	3	1	2	0
3	1	1	3	1	3	2	3	2
3	1	1	3	2	2	2	1	0
3	1	1	3	2	2	2	3	0
3	1	1	3	2	2	3	2	1
3	1	1	3	2	3	1	1	0
3	1	1	3	2	3	1	2	0
3	1	1	3	2	3	3	3	1
3	1	1	3	3	1	1	2	0
3	1	1	3	3	1	2	3	0
3	1	1	3	3	2	1	2	0
3	1	1	3	3	2	3	3	1
3	1	1	3	3	3	3	1	1

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1	3	2	1	2	1	2	2	0
1	3	2	1	2	3	2	1	0
1	3	2	1	3	1	3	1	1
1	3	2	3	1	3	3	2	0
1	3	2	3	2	1	2	3	0
1	3	2	3	2	3	1	1	0
1	3	2	3	2	3	2	3	0
1	3	2	3	3	1	3	3	0
1	3	2	3	3	2	3	3	0
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1	3	3	3	1	1	2	3	2
1	3	3	3	1	3	3	3	2
1	3	3	3	2	2	2	3	0
1	3	3	3	2	3	3	2	2
1	3	3	3	3	1	2	2	1
1	3	3	3	3	1	2	3	2
1	3	3	3	3	1	3	1	1
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2	1	1	3	3	1	2	3	2

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3	1	2	1	1	2	1	1	0
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3	1	3	1	2	2	3	3	1
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3	1	3	1	3	1	3	3	1
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3	1	3	3	1	2	2	1	0
3	1	3	3	1	2	2	2	0
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3	1	3	3	1	3	3	2	0

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2	1	2	1	2	1	2	3	1
2	1	2	1	2	2	1	2	2
2	1	2	1	2	3	3	3	1
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2	1	2	3	2	1	2	2	1
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2	1	2	3	2	2	1	2	0
2	1	2	3	2	2	3	1	1
2	1	2	3	3	1	1	2	0
2	1	2	3	3	1	3	2	1
2	1	2	3	3	2	1	2	1
2	1	2	3	3	2	2	1	1
2	1	2	3	3	3	1	2	1
2	1	2	3	3	3	2	2	2
2	1	3	1	1	1	1	1	0
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2	1	3	1	1	3	3	1	0
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