Table S1. *M. mediator* CP sequences characteristics and FPKM values during major developmental stages.

| Gene    | Signal peptide | Full length | Length | FPKM egg | FPKM 1st instar | FPKM 2nd instar | FPKM 3rd instar | FPKM pupa | FPKM adult | Expression cluster |
|---------|----------------|-------------|--------|----------|-----------------|-----------------|-----------------|-----------|-------------|------------------|
| MmCPR1  | Y              | Y           | 131.00 | 1728.79  | 537.67          | 351.37          | 487.36          | 7.20      | 1.19        | III              |
| MmCPR2  | Y              | Y           | 138.00 | 756.65   | 310.17          | 220.88          | 74.55           | 2.78      | 0.70        | III              |
| MmCPR3  | Y              | Y           | 105.00 | 939.92   | 500.70          | 207.95          | 321.64          | 0.99      | 6.77        | III              |
| MmCPR4  | Y              | Y           | 133.00 | 444.53   | 369.63          | 138.73          | 10.68           | 18.55     | 4.80        | III              |
| MmCPR5  | Y              | Y           | 193.00 | 78.73    | 0.64            | 130.84          | 117.51          | 529.65    | 34.11       | I                |
| MmCPR6  | Y              | Y           | 166.00 | 0.83     | 0.23            | 0.87            | 243.15          | 13.84     | 6.89        | IV               |
| MmCPR7  | Y              | Y           | 168.00 | 130.01   | 12.74           | 10.43           | 7.21            | 238.81    | 13.08       | I                |
| MmCPR8  | Y              | Y           | 147.00 | 369.64   | 92.29           | 17.52           | 1.14            | 285.70    | 378.43      | I                |
| MmCPR9  | Y              | Y           | 133.00 | 28.23    | 4.66            | 0.36            | 0.00            | 94.06     | 482.12      | I                |
| MmCPR10 | Y              | Y           | 159.00 | 747.48   | 147.82          | 2.58            | 0.50            | 8.20      | 0.90        | II               |
| MmCPR11 | Y              | Y           | 190.00 | 1175.39  | 5.65            | 21.09           | 11.29           | 1144.43   | 1.15        | I                |
| MmCPR12 | Y              | Y           | 146.00 | 5.49     | 0.39            | 0.17            | 6.89            | 194.95    | 19.55       | I                |
| MmCPR13 | Y              | Y           | 104.00 | 291.04   | 100.62          | 6.88            | 42.59           | 257.77    | 82.54       | I                |
| MmCPR14 | Y              | Y           | 176.00 | 183.48   | 20.15           | 8.85            | 254.66          | 0.82      | 8.58        | IV               |
| MmCPR15 | Y              | Y           | 310.00 | 2.38     | 0.31            | 0.00            | 0.06            | 47.41     | 4.41        | I                |
| MmCPR16 | Y              | Y           | 207.00 | 0.00     | 0.18            | 0.00            | 0.00            | 24.47     | 78.76       | I                |
| MmCPR17 | Y              | Y           | 348.00 | 8.86     | 0.49            | 0.73            | 0.34            | 89.18     | 0.18        | I                |
| MmCPR18 | Y              | Y           | 139.00 | 1.98     | 0.13            | 0.11            | 0.17            | 1.01      | 2.03        | II               |
| MmCPR19 | Y              | Y           | 131.00 | 72.08    | 0.29            | 0.00            | 0.38            | 0.47      | 0.39        | II               |
| MmCPR20 | Y              | Y           | 293.00 | 1.44     | 0.06            | 4.85            | 17.94           | 1.83      | 0.46        | IV               |
| MmCPR21 | Y              | Y           | 182.00 | 36.81    | 1.46            | 1.46            | 0.54            | 121.05    | 0.09        | I                |
| MmCPR22 | Y              | Y           | 252.00 | 0.41     | 0.15            | 2.20            | 3.59            | 0.16      | 0.13        | IV               |
| MmCPR23 | Y              | Y           | 228.00 | 0.57     | 0.08            | 2.22            | 2.16            | 0.18      | 0.30        | IV               |
| MmCPR24 | Y              | Y           | 151.00 | 38.77    | 2.65            | 0.08            | 0.07            | 0.00      | 0.08        | II               |
| MmCPR25 | Y              | Y           | 174.00 | 1778.38  | 215.35          | 1.53            | 2.43            | 15.46     | 3.51        | II               |
| MmCPR26   | Y | Y | 238.00 | 17.38 | 0.32 | 0.86 | 0.83 | 130.38 | 0.11 | I  |
|----------|---|---|--------|-------|------|------|------|--------|------|----|
| MmCPR27  | Y | Y | 231.00 | 8.86  | 0.49 | 0.73 | 0.34 | 89.18  | 0.18 | I  |
| MmCPR28  | Y | N-terminal | 138.00 | 1838.08 | 94.28 | 10.08 | 1.07 | 0.90  | 0.86 | II |
| MmCPR29  | Y | N-terminal | 147.00 | 1308.10 | 105.62 | 6.29  | 1.40 | 1.54  | 0.43 | II |
| MmCPR30  | Y | N-terminal | 178.00 | 45.81 | 0.11 | 12.43 | 2.19 | 3.55  | 0.21 | I  |
| MmCPR31  | Y | Y | 198.00 | 5.31  | 2.90 | 1.40 | 1.72 | 4.13  | 18.21 | I  |
| MmCPR32  | Y | Y | 202.00 | 0.21  | 0.00 | 0.00 | 0.00 | 15.47  | 0.03 | I  |
| MmCPR33  | Y | Y | 200.00 | 38.56 | 0.10 | 12.43 | 2.19 | 3.55  | 0.21 | II |
| MmCPR34  | Y | Y | 130.00 | 0.49  | 0.54 | 0.00 | 0.00 | 1.33  | 0.97 | I  |
| MmCPR35  | Y | Y | 130.00 | 0.00  | 0.00 | 0.00 | 0.00 | 140.00 | 30.75 | I  |
| MmCPR36  | Y | Y | 200.00 | 0.21  | 0.00 | 0.00 | 0.00 | 7.52  | 4.84 | I  |
| MmCPR37  | N | C-terminal | 203.00 | 1.27  | 0.00 | 0.48 | 0.00 | 31.83  | 0.62 | I  |
| MmCPR38  | N | C-terminal | 226.00 | 1.98  | 0.13 | 0.17 | 0.11 | 1.01  | 2.03 | I  |
| MmCPR39  | Y | Y | 198.00 | 39.91 | 18.19 | 4.88 | 21.67 | 94.93  | 30.75 | I  |
| MmCPR40  | Y | Y | 287.00 | 5.18  | 0.93 | 0.00 | 0.27 | 1.65  | 0.79 | II |
| MmCPAP1-N | Y | Y | 214.00 | 1.37  | 0.18 | 64.89 | 23.12 | 1.35  | 0.08 | IV |
| MmCPAP1-H | Y | Y | 192.00 | 140.00 | 14.75 | 30.93 | 26.61 | 145.79 | 11.50 | I  |
| MmCPAP1-K1 | Y | Y | 607.00 | 22.77 | 0.62 | 4.04 | 0.45 | 10.02  | 3.49 | II |
| MmCPAP1-B2 | Y | Y | 692.00 | 26.05 | 2.59 | 3.16 | 3.44 | 24.89  | 0.61 | I  |
| MmCPAP1-I | Y | N-terminal | 187.00 | 167.08 | 14.56 | 12.84 | 5.76 | 181.75 | 0.36 | I  |
| MmCPAP1-B1 | Y | Y | 220.00 | 13.81 | 11.31 | 2.30 | 2.50 | 8.17  | 0.67 | III |
| MmCPAP1-F | Y | Y | 124.00 | 53.69 | 0.77 | 1.07 | 0.00 | 144.51 | 5.90 | I  |
| MmCPAP1-G | Y | Y | 331.00 | 340.49 | 10.37 | 8.51 | 2.97 | 1240.66 | 0.77 | I  |
| MmCPAP3-C | Y | Y | 266.00 | 1016.48 | 24.30 | 25.51 | 19.40 | 252.59 | 1.84 | II |
| MmCPAP3-D2 | Y | Y | 257.00 | 360.26 | 26.52 | 11.12 | 3.63 | 263.92 | 4.55 | I  |
| MmCPAP3-B | Y | Y | 292.00 | 105.28 | 0.52 | 3.14 | 8.82 | 34.78  | 0.35 | II |
|                |   Y |        |   N-terminal | 229.00 | 270.56 | 16.35 | 1.36 | 0.51 | 50.27 | 2.01 | II |
|----------------|-----|--------|--------------|--------|--------|-------|------|------|-------|------|----|
| MmCPAP3-D1     |     |        | N-terminal   | 232.00 | 889.19 | 23.91 | 43.41 | 29.59 | 695.35 | 2.52 | I  |
| MmCPAP3-A1     |     | Y      | N-terminal   | 184.00 | 401.94 | 1.71  | 30.64 | 27.40 | 517.54 | 0.80 | I  |
| MmTWDL-2       |     | Y      | N-terminal   | 286    | 59.19  | 5.87  | 2.65 | 1.22 | 2.55  | 0.03 | II |
| MmCPAP3-A1     |     | Y      | N-terminal   | 378.00 | 4.48   | 2.16  | 16.34 | 8.16  | 5039.96 | 0.47 | I  |
| MmCPAP3-A1     |     | Y      | N-terminal   | 140.00 | 11.21  | 0.14  | 4.23 | 0.28 | 112.86 | 0.06 | I  |
| MmCPLCP-3      |     | Y      | N-terminal   | 261.00 | 1.84   | 0.72  | 2.39 | 1.58 | 1384.79 | 0.29 | I  |
| MmCPLCP-4      |     | Y      | N-terminal   | 221.00 | 10.82  | 0.00  | 2.13 | 2.23 | 95.99  | 0.08 | I  |
| MmCPLCP-5      |     | Y      | N-terminal   | 529.00 | 0.03   | 0.00  | 0.09 | 0.07 | 36.99  | 0.09 | I  |
| MmCPLCP-6      |     | Y      | N-terminal   | 137.00 | 1.94   | 0.21  | 0.18 | 2.22 | 77.41  | 0.21 | I  |
| MmCPLCP-7      |     | Y      | N-terminal   | 385.00 | 30.54  | 3.07  | 13.32 |46.62 | 3010.03 | 2.28 | I  |
| MmCPF-1        |     | Y      | N-terminal   | 203.00 | 3660.91 | 2.43 | 40.24 | 3.98 | 9.47  | 0.33 | II |
| MmApd-1        |     | Y      | N-terminal   | 283.00 | 18.41  | 3.15  | 7.75 | 4.24 | 8474.84 | 21.85 | I  |
| MmApd-2        |     | Y      | N-terminal   | 167.00 | 0.00   | 0.00  | 0.00 | 0.00 | 0.87  | 15.51 | I  |
| MmApd-3        |     | N      | C-terminal   | 265.00 | 0.45   | 0.36  | 0.00 | 0.07 | 18.55 | 3.18  | I  |