**Supplemental Table 3.** CPM Mathematical Implementation

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| **Representation** | **Mathematical Formulation** | **Equation Terms** | **Explanation** |
| Contact Energy (H1) |  | J | Contact Coefficient |
| , | Neighboring lattice sites of individual cells |
| t | Cell types |
|  | Kronecker delta, localizes contact energy contributions to cell-cell interfaces |
| Volume constraint (H2) |  |  | Volume constraint scaling factor |
| Logarithmic chemotaxis (H3) |  |  | Chemotaxis Parameter |
| *c* | Chemical field concentration |
|  | Cell body centroid from which chemotaxis behaviors are calculated |
| t | Cell types |
|  | Time |
|  | Lattice site |
| Diffusion of chemical species |  | *c* | Chemical field concentration |
| *k* | Decay constant |
| *D* | Diffusion constant |
| *S* | Secretion |