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Figure S1: IAC model for N = 2 enhancers as a product graph of product graphs. (a) Graphs describing the activation and communication status of enhancer 1. (b) Graphs describing the activation and communication status of enhancer 2. (c) The graph H_1 whose underlying regulatory graph is $K_{a,1} \otimes K_{c,1}$. (d) The graph H_2 whose underlying regulatory graph is $K_{a,2} \otimes K_{c,2}$. (e) The graph $H_1 \circledast H_2$ satisfying the default model Assumptions 1-4 with components H_1 and H_2 . The regulatory graph of $H_1 \circledast H_2$ is given by $(K_{a,1} \otimes K_{c,1}) \otimes (K_{a,2} \otimes K_{c,2})$. Each vertex of this graph corresponds to the activation and communication statuses of both enhancers. For the vertices along the top of the graph, the product-graph binary notation is also provided using the coordinate system $((a_1, c_1), (a_2, c_2))$. Reverse edges and labels of most edges are omitted for clarity. Production states are highlighted in purple with corresponding production rates also in purple font.