

Environment features	Surroundings nutrient concentration (M)	Nutrient diffusivity (dm <sup>2</sup> s <sup>-1</sup> )	Volume of environment			
	10 <sup>-2</sup>	10 <sup>-7</sup>	1mm <sup>3</sup>			
Gene network features	Transcription speed (s <sup>-1</sup> )	Translation speed (s <sup>-1</sup> )	Basal polymerase binding probability	Polymerase binding probability with activator	Ploymerase binding probability with repressor	
	10 <sup>1</sup>	10 <sup>-1</sup>	10 <sup>-2</sup>	0.5	0	
	Timestep for TF dynamics (s.)	k <sub>on</sub> BSTF (M <sup>-1</sup> s <sup>-1</sup> )	k <sub>off</sub> BSTF (s <sup>-1</sup> )	mRNA degradation rate (s <sup>-1</sup> )	Protein degradation rate (s <sup>-1</sup> )	Sizer degradation rate (s <sup>-1</sup> )
	30	10 <sup>2</sup>	10 <sup>5</sup>	10 <sup>-3</sup>	10 <sup>-3</sup>	0.2
Energy processing features	Nutrient to energy rate	ATP basal cost per V=1m3 (ATP units/μm <sup>3</sup> )	Basal metabolism allometry coefficient	Growth cost of one cascade	Nutrient cost of one cascade	
	30	10 <sup>6</sup>	5:6	10 <sup>3</sup>	10 <sup>2</sup>	
Cell features	Mutation rate per base (per gen.)	Daughter cells ratio	Lethal cell volume	Basal death rate		
	10 <sup>-4</sup>	1:1	1	0.25		
Initial conditions	Initial sizer threshold	Initial cell volume (μm <sup>3</sup> )	Initial number of transcripts	Initial number of cells	Theoretical simulation duration (s.)	
	100	30	5	500	10 <sup>7</sup>	