



Gaints

Gints main frame

Simulation Tab

Properties Tab

Data capture Tab

Pattern research Tab

Select from your library
the genes you want in your
simulation by clicking on it

Simulation features
you want

Genes selected
for the simulation

Gints

Options Help

Simulation See properties Add a gene Search a pattern

cro
c1
firstGenes
lateGenes
lysogenic

How many ARN polymerases do you want in your cell ? 3

How many ribosomes do you want in your cell ? 3

How many cycles would you like your simulation to last ? 1500

What limit do you want for ARNm number ? 400

What limit do you want for protein number ? 400

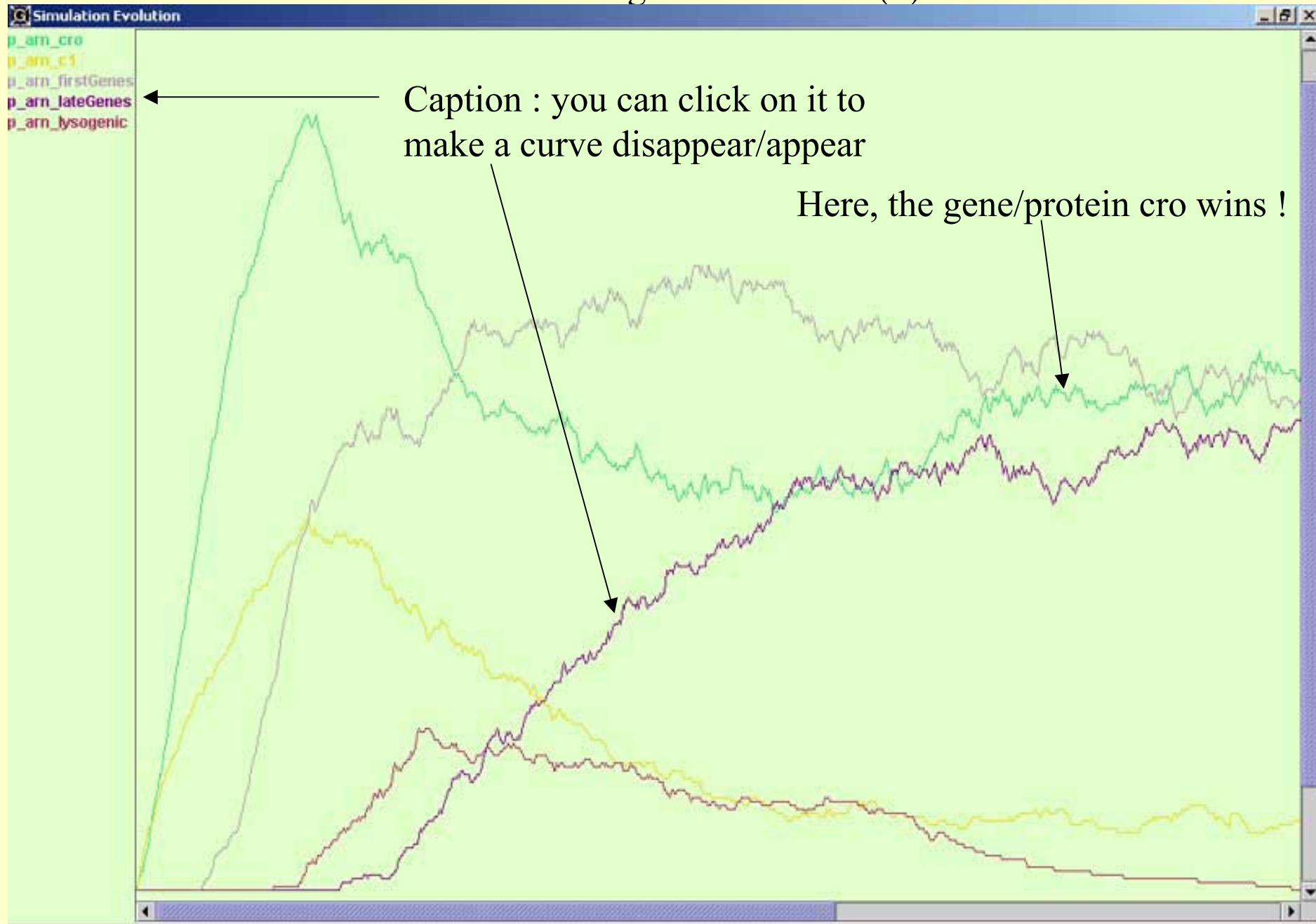
cro
c1
firstGenes
lateGenes
lysogenic

Launch simulation Interactions graph

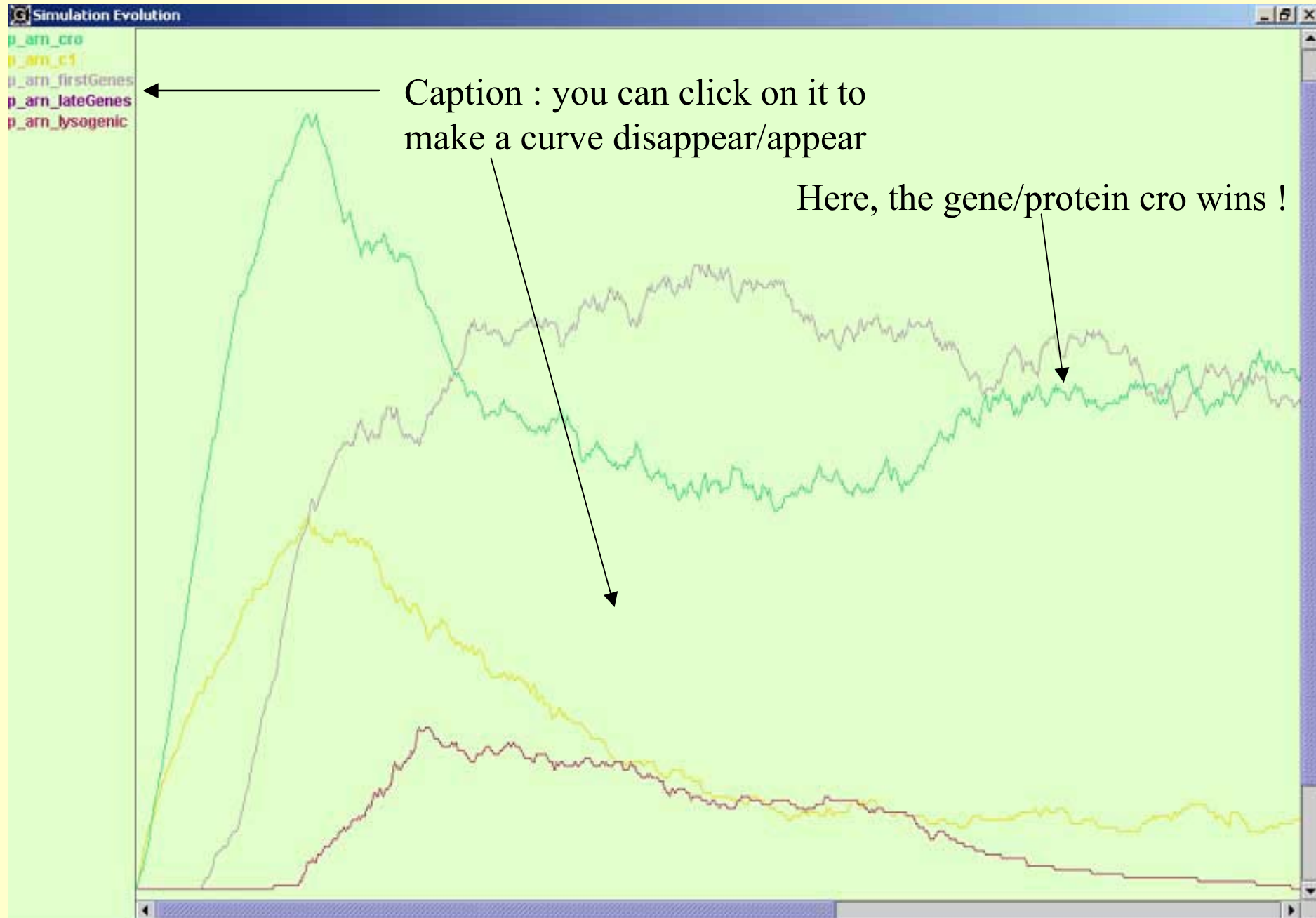
Launch Simulation

Generate a picture
showing interactions
between selected entities

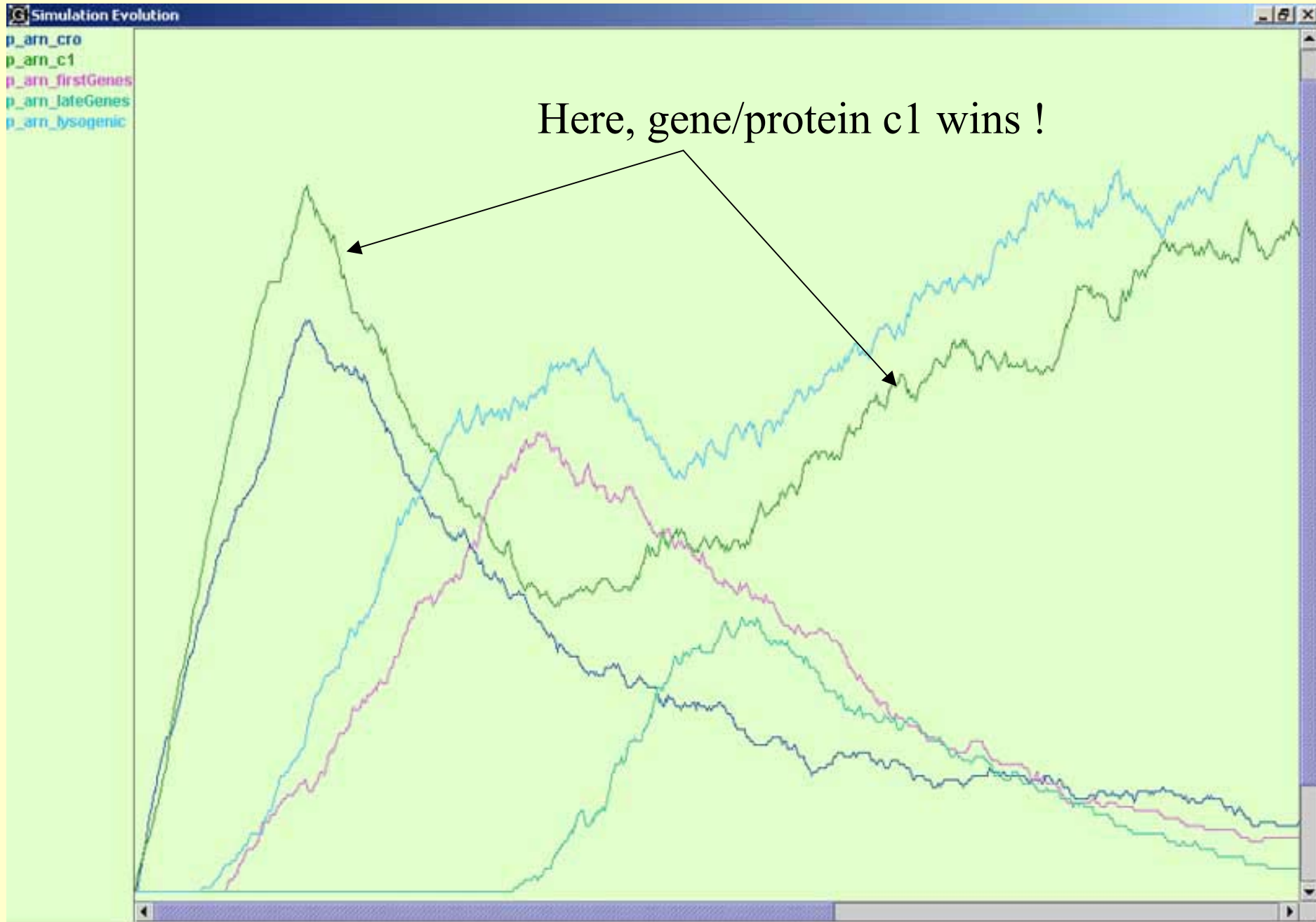
When you click on ***Launch Simulation***, you can see the proteome evolution during the simulation (1)



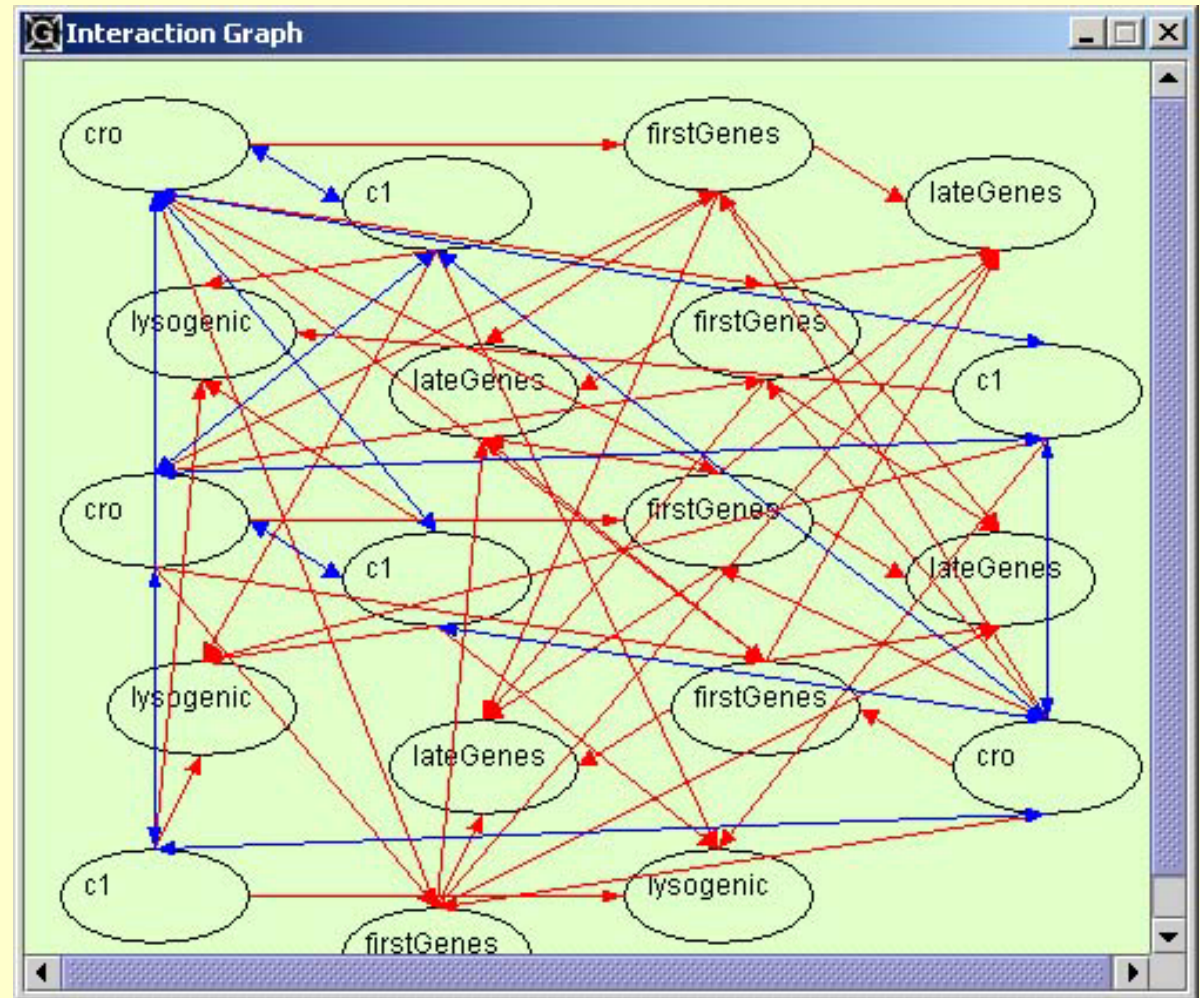
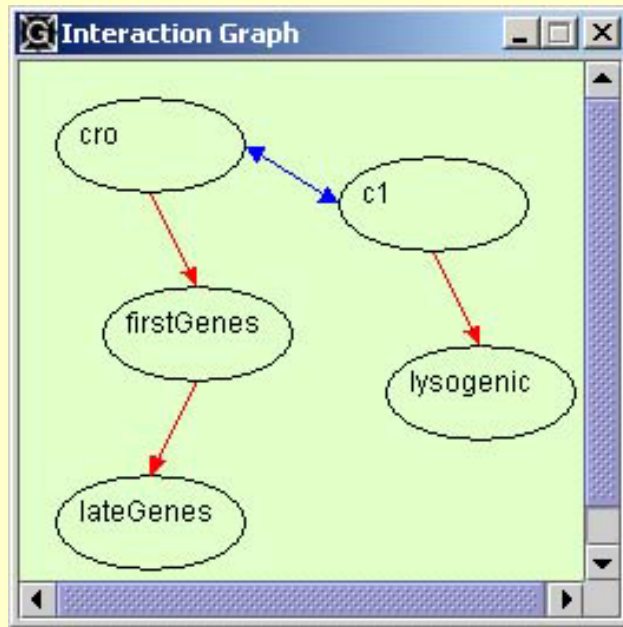
When you click on ***Launch Simulation***, you can see the proteome evolution during the simulation (2)



When you click on ***Launch Simulation***, you can see the proteome evolution during the simulation (3)



Visualization of a draw showing interactions



Red arrows represent activations
Blue arrows represent inhibitions

See genes properties

The screenshot shows the 'Gints' software window with the 'See properties' tab selected. The interface is divided into two main sections: a left panel with labels for various gene properties, and a right panel with input fields and a list of available genes.

Property Label	Value	Gene List
Name :	c1	cro
Sequence :	atgttttag	c1
Coefficient :	7	firstGenes
Activator(s) :	[no_known_action]	lateGenes
Activator coefficient 1 :	[0]	lysogenic
Activator coefficient 2 :	[0]	
Activator coefficient 3 :	[0]	
Inhibitor(s) :	[cro]	
Inhibitor coefficient 1 :	[6]	
Inhibitor coefficient 2 :	[60]	
Inhibitor coefficient 3 :	[0.8]	

Click on a gene in the list, his properties will display

Add a new gene in your library

The screenshot shows the 'Gints' application window with the 'Add a gene' tab selected. The form contains the following fields and values:

Field	Value
Name :	yourGene
Sequence :	aaactaatgttcactttacctagct
Coefficient :	10
Is activated by :	gene1 ; gene2 ; gene3
Activation coefficient 1 :	2.6 ; 5 ; 1.56
Activation coefficient 2 :	60 ; 30 ; 90
Activation coefficient 3 :	1 ; 0.5 ; 1.2
Is inhibited by :	gene4 ; gene5
inhibition coefficient 1 :	5 ; 6
inhibition coefficient 2 :	25 ; 100
inhibition coefficient 2 :	0.2 ; 1.4

A bracket on the right side of the form groups the 'Is activated by' and 'Is inhibited by' fields and their corresponding coefficient fields, with a note explaining the use of semicolons.

Note that a semicolon separates data from different genes.

At the bottom of the window, there is a button labeled 'Add a gene'.

You can add a gene by filling at least its name and its sequence.

Note that « is inhibited by geneX » doesn't mean anything in biology. We should say « is inhibited by geneX protein ». But for the moment, as we consider 1 gene gives 1 protein, it is easier for the data capture, to use genes names.

Search for a pattern of expression (1)

Fill the path of the
picture you want
to display
Click on display

The screenshot shows the 'Gints' software window. It has a menu bar with 'Options' and 'Help'. Below the menu bar are four tabs: 'Simulation', 'See properties', 'Add a gene', and 'Search a pattern'. The 'Search a pattern' tab is active. On the left side, there is a vertical panel with an 'Erase' button. Below it is a text input field labeled 'Document to display:' containing the path 'c:\pictForResearch.jpg'. An arrow points from the text 'Fill the path of the picture you want to display' to this input field. Below the input field is a 'Display' button. To the right of the left panel is a large, empty gray rectangular area. At the bottom of the window, there are four input fields labeled 'Maximum number of genes involved:', 'Minimum number of genes involved:', 'Horizontal degree:', and 'Vertical degree:'. To the right of these fields is a 'Launch research' button.

Options Help

Simulation See properties Add a gene Search a pattern

Erase

Document to display:
c:\pictForResearch.jpg

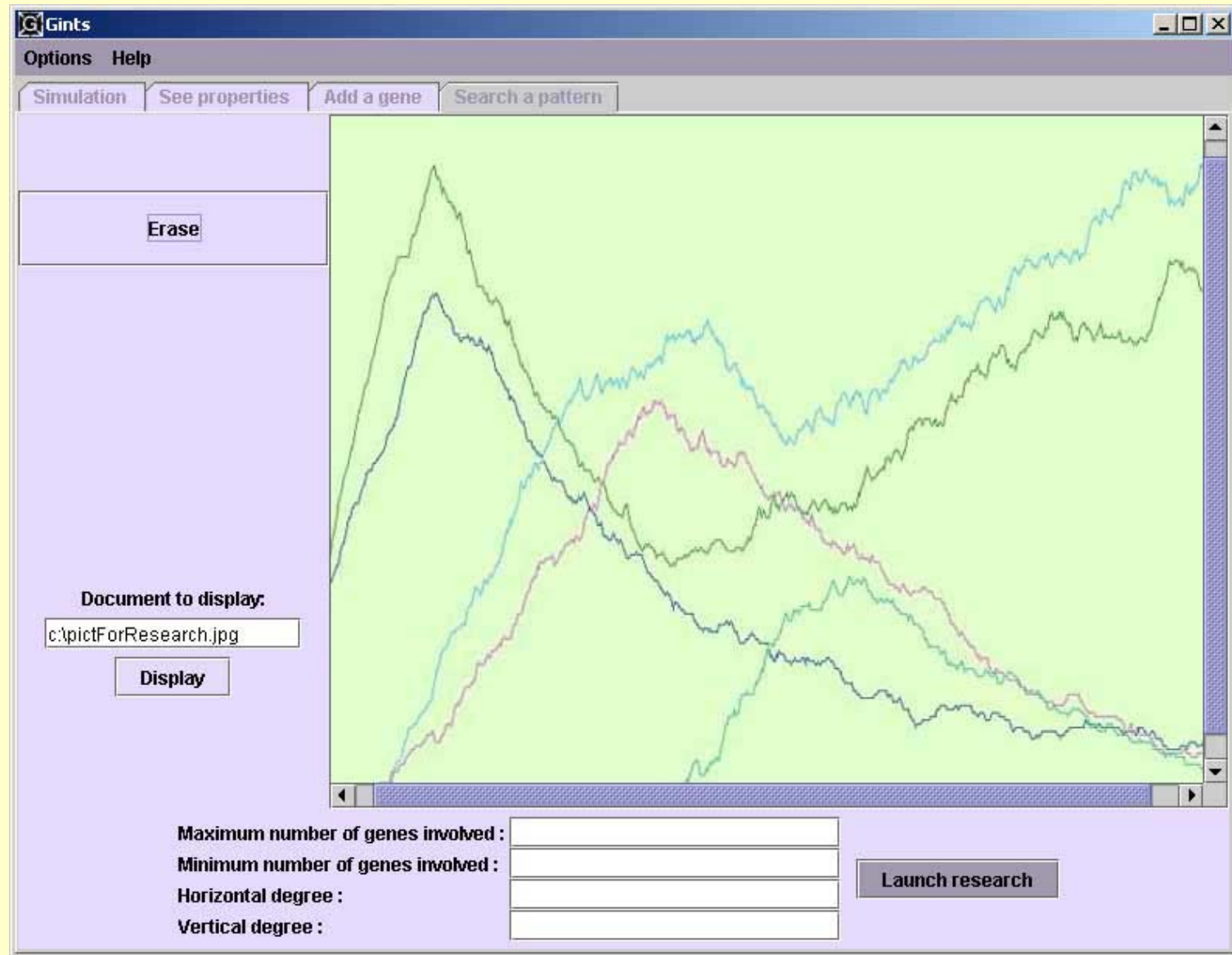
Display

Maximum number of genes involved :
Minimum number of genes involved :
Horizontal degree :
Vertical degree :

Launch research

If you want to draw without displaying any picture, just click on display.

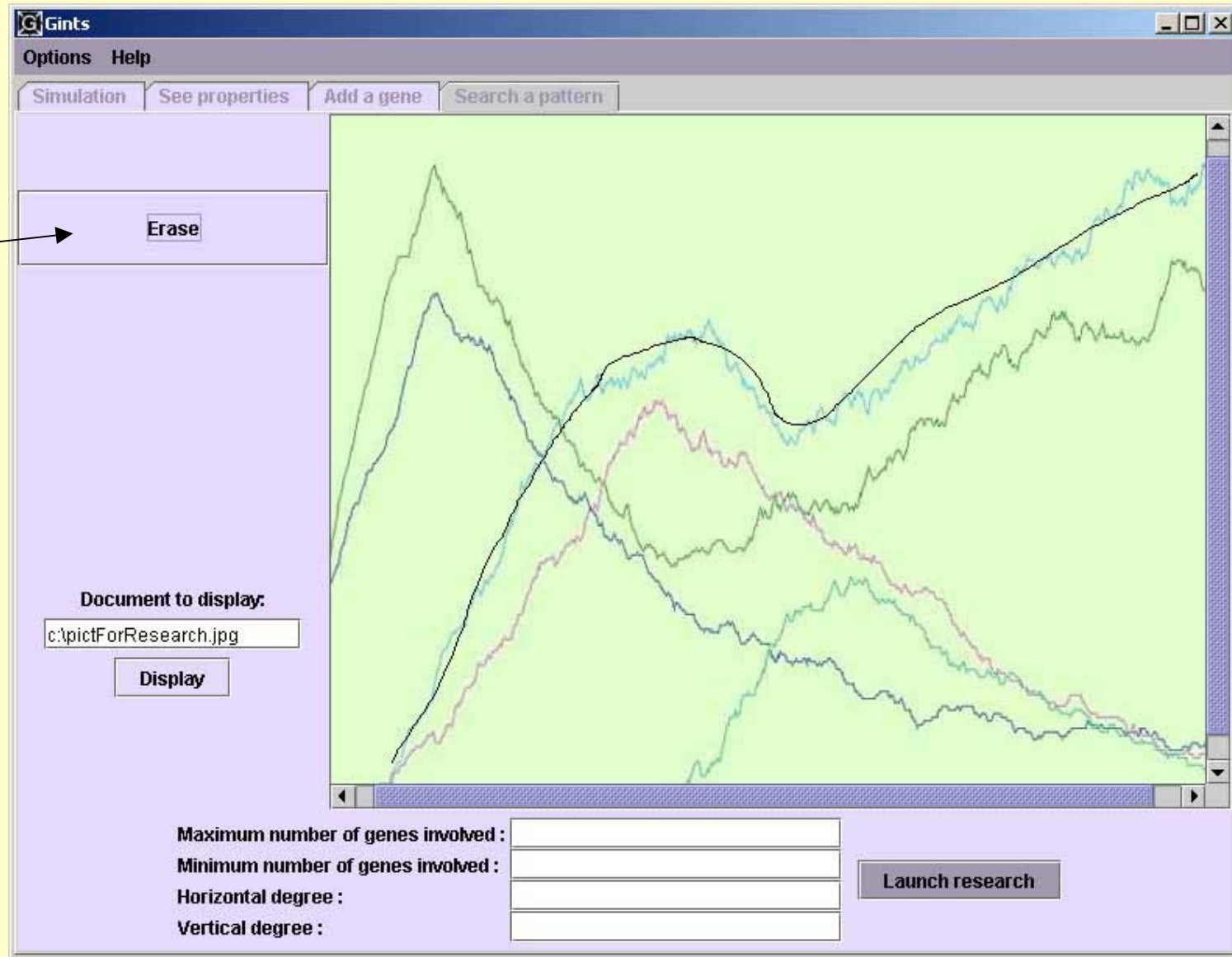
Search for a pattern of expression (2)



Now you can draw a curve on the picture just by clicking with the mouse.

Search for a pattern of expression (3)

You can erase
your draw



Soon, it will be possible to search a combination of genes from your library, in which, one gene has the pattern of expression you have drawn.