

## Synteny analyses

From the Ensembl database ([www.ensembl.org](http://www.ensembl.org)), we downloaded the protein datasets publicly available for the zebrafish *Danio rerio* (version Zv9) (Cypriniformes), and three Percomorpha the medaka *Oryzias latipes* (v. MEDAKA1), the stickleback *Gasterosteus aculeatus* (v. BROADS1) and the tetraodon *Tetraodon nigroviridis* (v. TETRAODON8). In order to retrieve the interspecific potentially orthologous genes, we performed a blastP analysis of all proteins of one species against all proteins of a second one. This was done for those four species onto which genes are assigned to chromosomes. We generated lists of simple reciprocal best blast hit (RBBH) selecting the best e-values, and then best score, of each pair of genes (from their corresponding proteins). Among them, we took only those RBBH that have the two genes assigned onto chromosomes. For intraspecific paralogous gene detection we used the same method, blasting all proteins against each other within a species, as previously done for the Tetraodon genome (Jaillon et al. 2004). Tandem gene duplications were not taken into account to only keep genes observed onto different chromosomes.

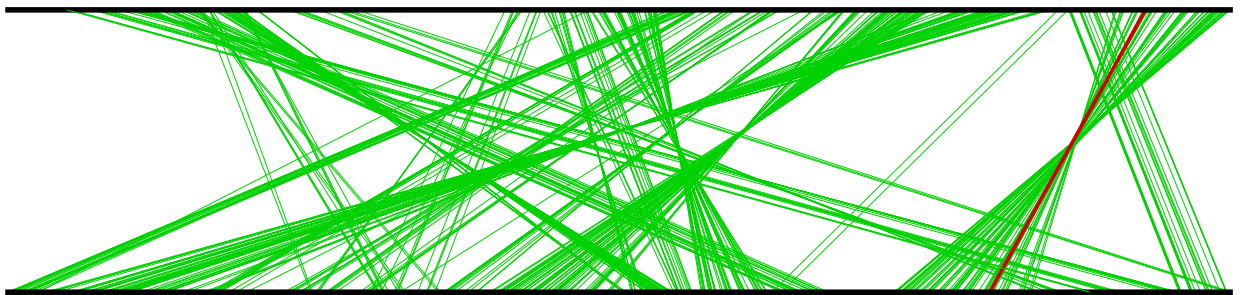
To ascertain the orthology or ohnology of each RTK gene between species or within species, we draw all the rbbh links between the chromosomes or group onto which orthologous genes or ohnologous genes of interest were located, and highlighted the links of the genes of interest.

Black lines represent chromosome, drawn at different scale to have them all represented at the same comparable size. Chromosome label is Dr for the zebrafish, Ol for the medaka, and Tn stands for Tetraodon. The group label is Ga for the stickleback. The orthologous relationship between genes is represented in green. The relationship of ohnologous genes between chromosomes is represented in cyan. The bold red lines show the orthologous or ohnologous relationship of the rtk of interest. Genes are ordered as in main Figure 6.

# egfra

OI\_17

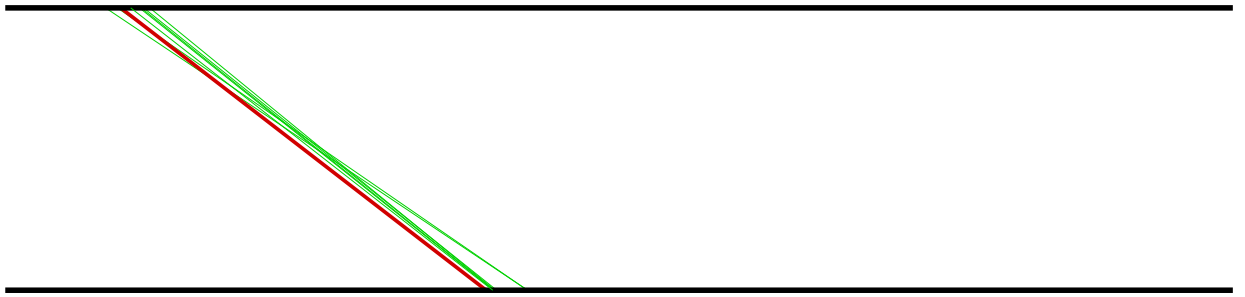
Ga\_3



# egfrb

OI\_20

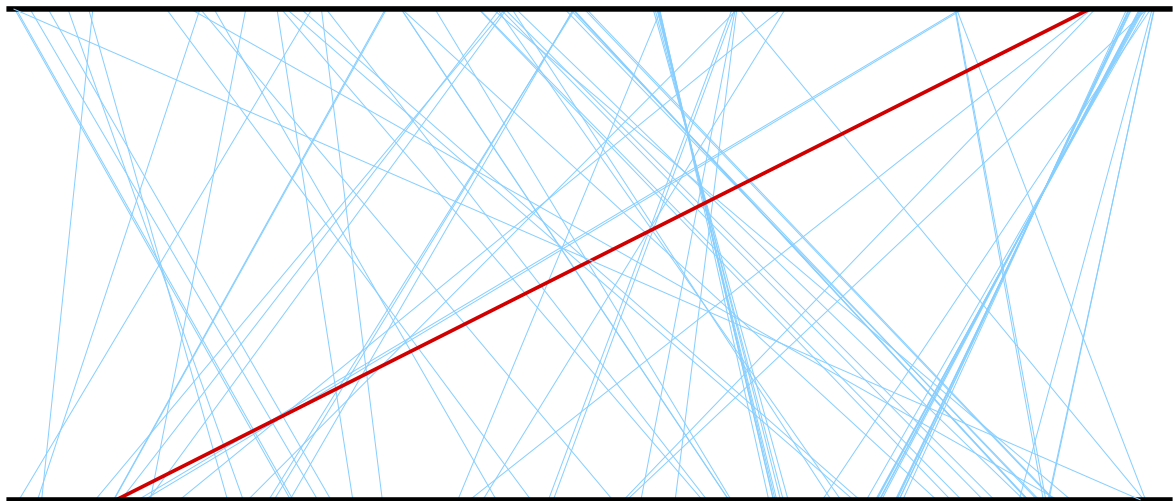
Tn\_4



**egfra ENSORLG00000017692 OI\_17 29571436**

**OI\_17**

**OI\_20**



**egfrb ENSORLG00000003577 OI\_20 2323059**

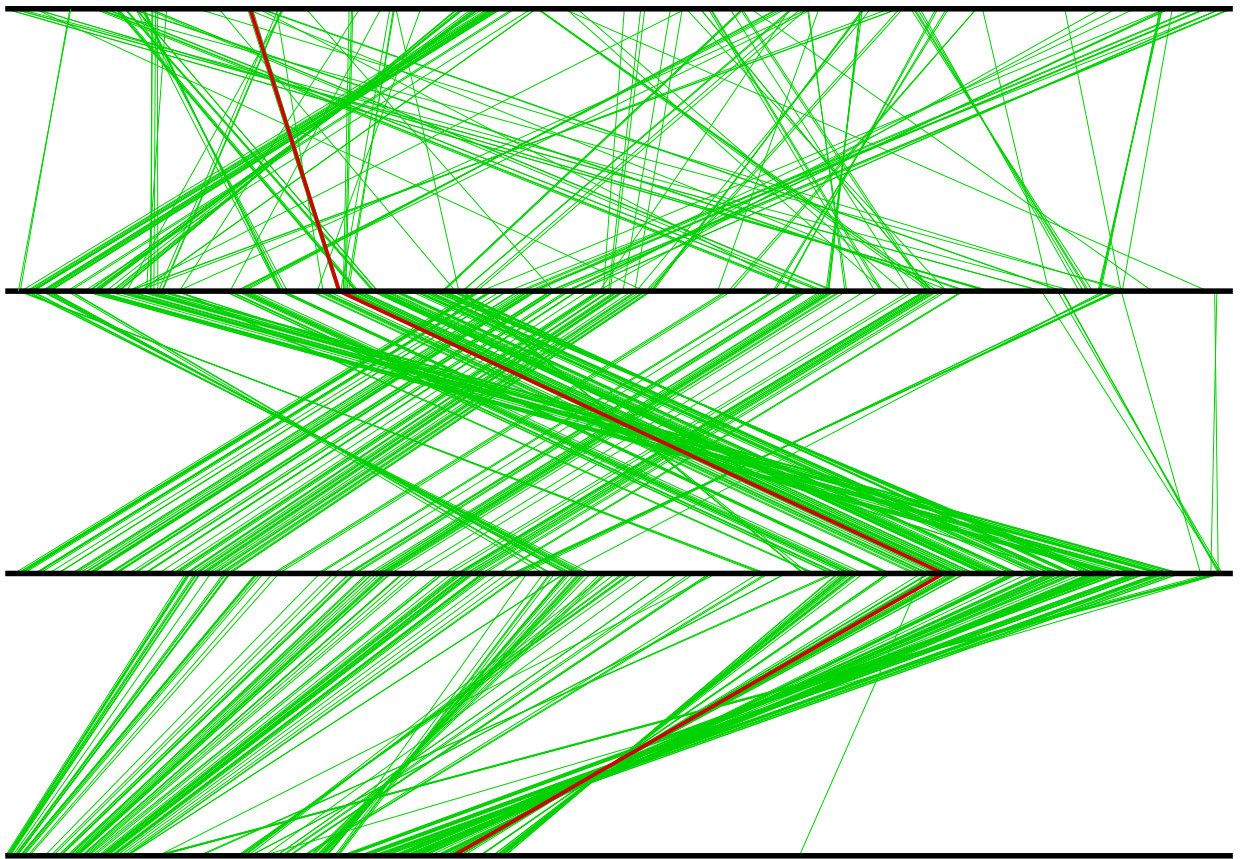
# erbb2

Dr\_12

OI\_19

Ga\_5

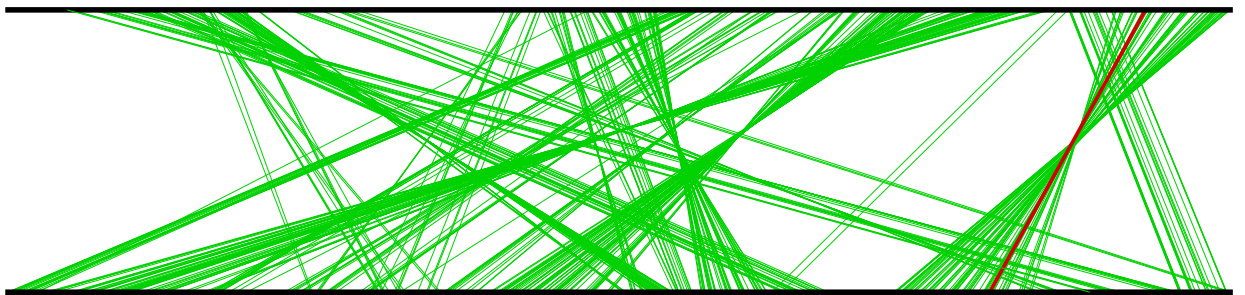
Tn\_2



# egfra

Ol\_17

Ga\_3



# egfrb

OI\_20

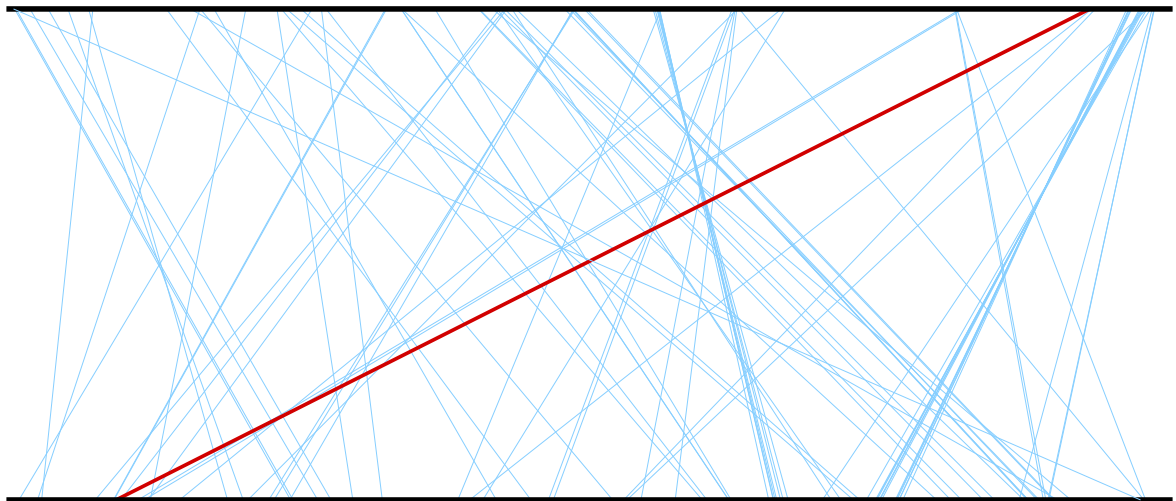
Tn\_4



**egfra ENSORLG00000017692 OI\_17 29571436**

**OI\_17**

**OI\_20**



**egfrb ENSORLG00000003577 OI\_20 2323059**



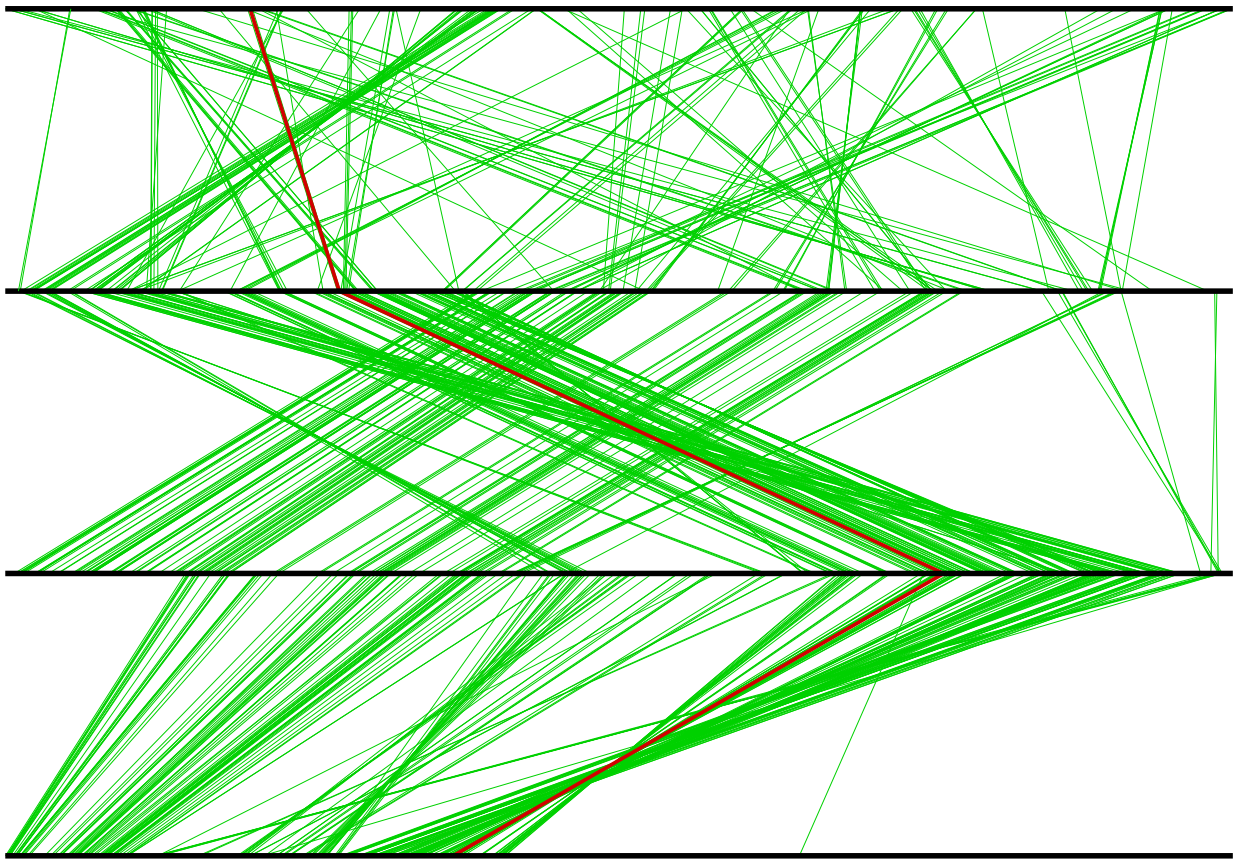
# erbb2

Dr\_12

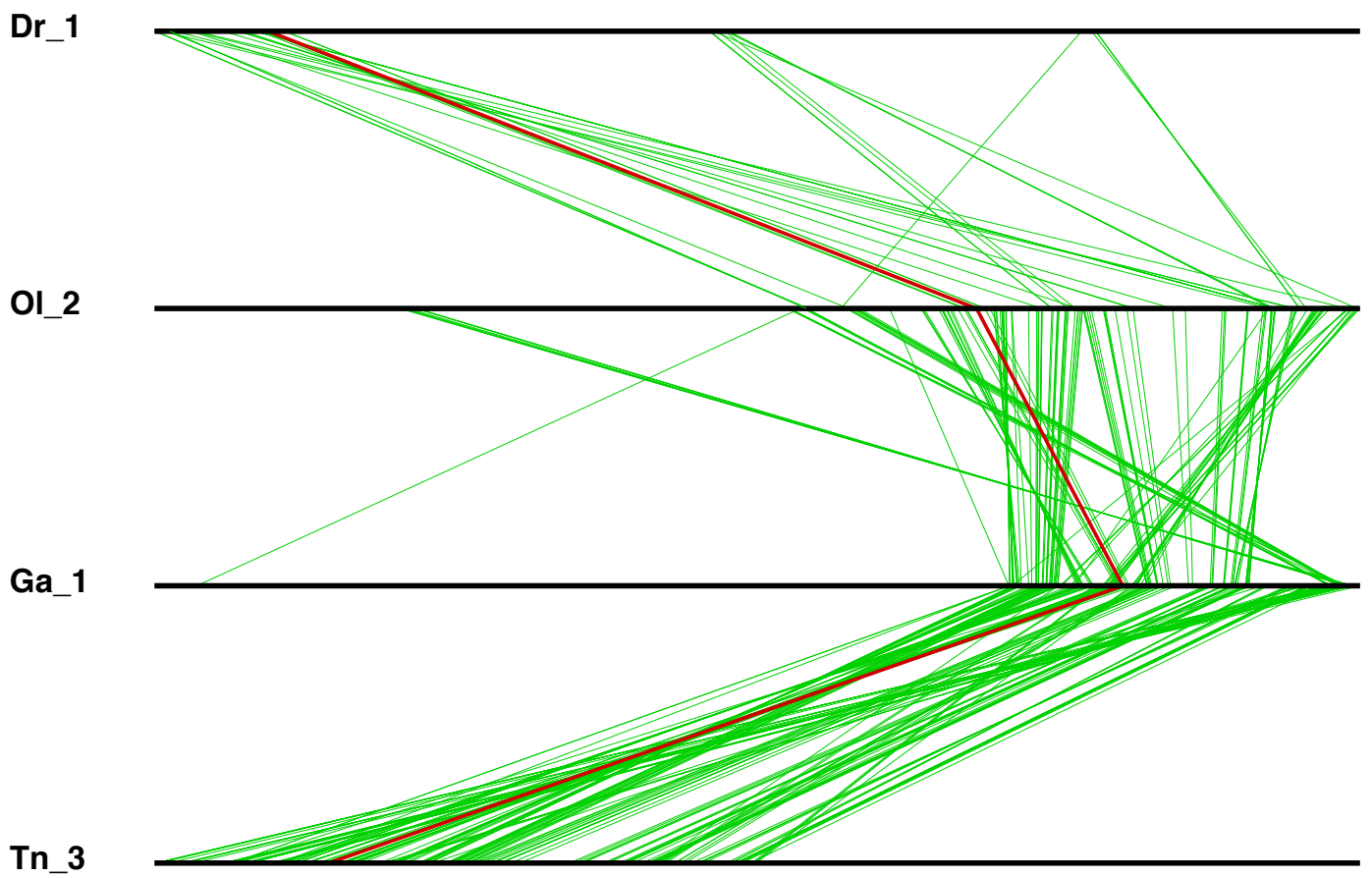
OI\_19

Ga\_5

Tn\_2



# erbb4a



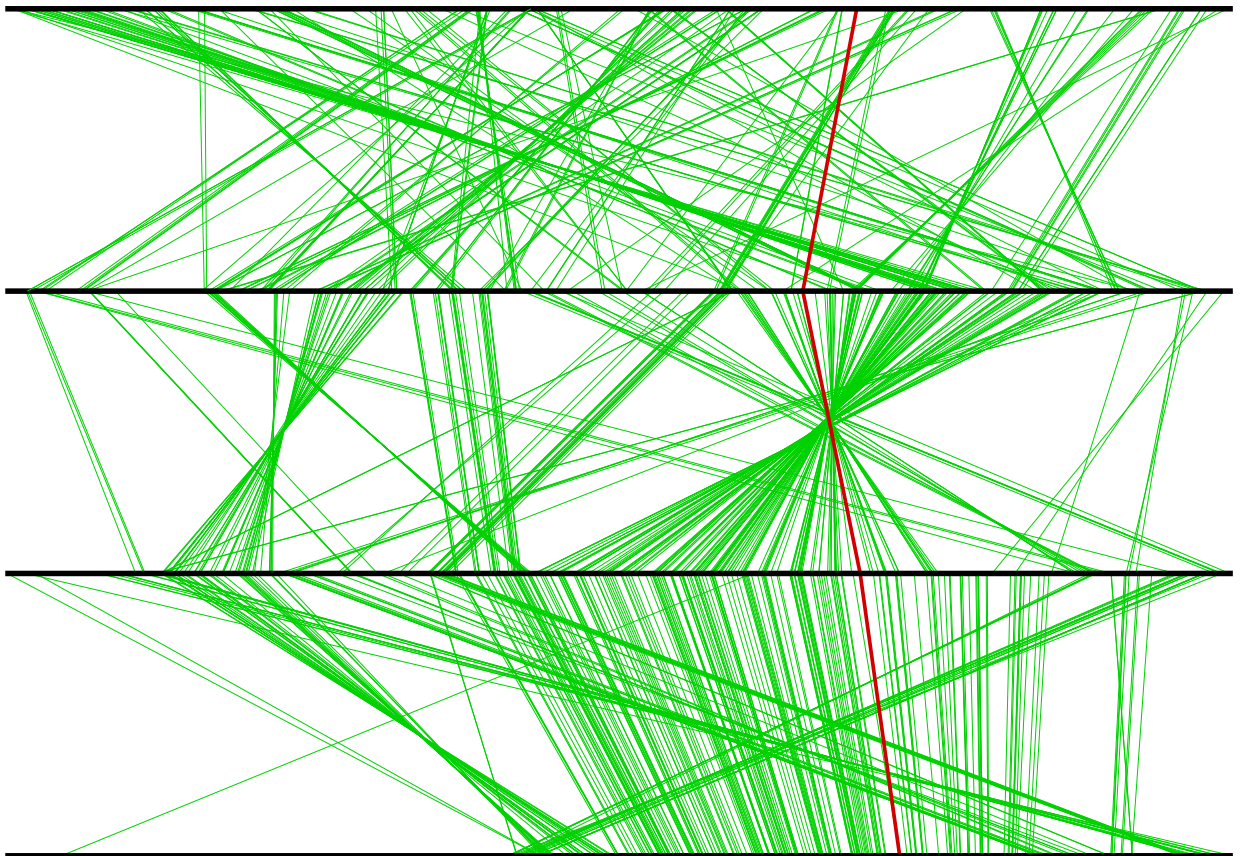
# erbb4b

Dr\_9

OI\_21

Ga\_16

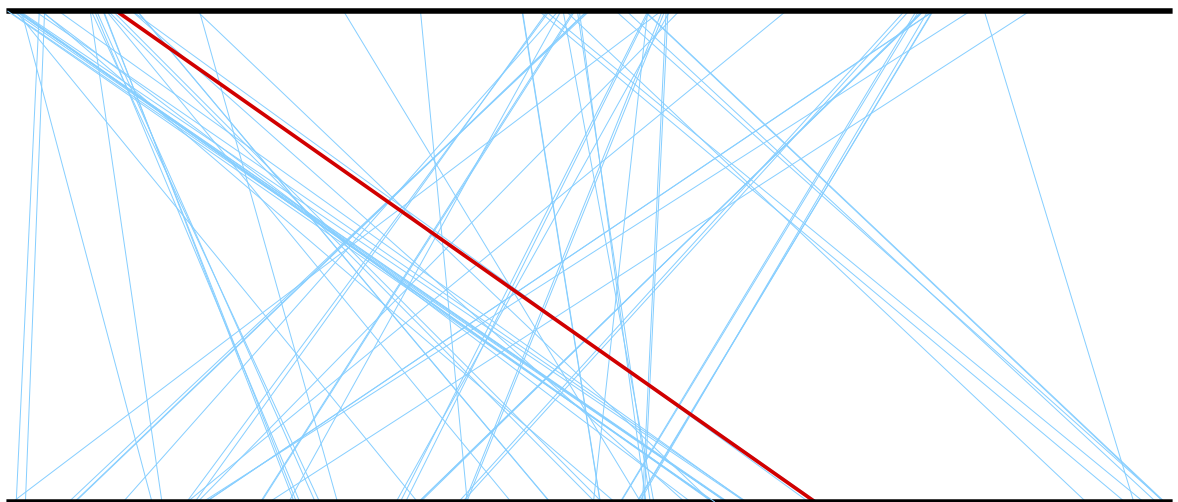
Tn\_2



**erbb4a ENSDARG00000063207 Dr\_1 5694955**

**Dr\_1**

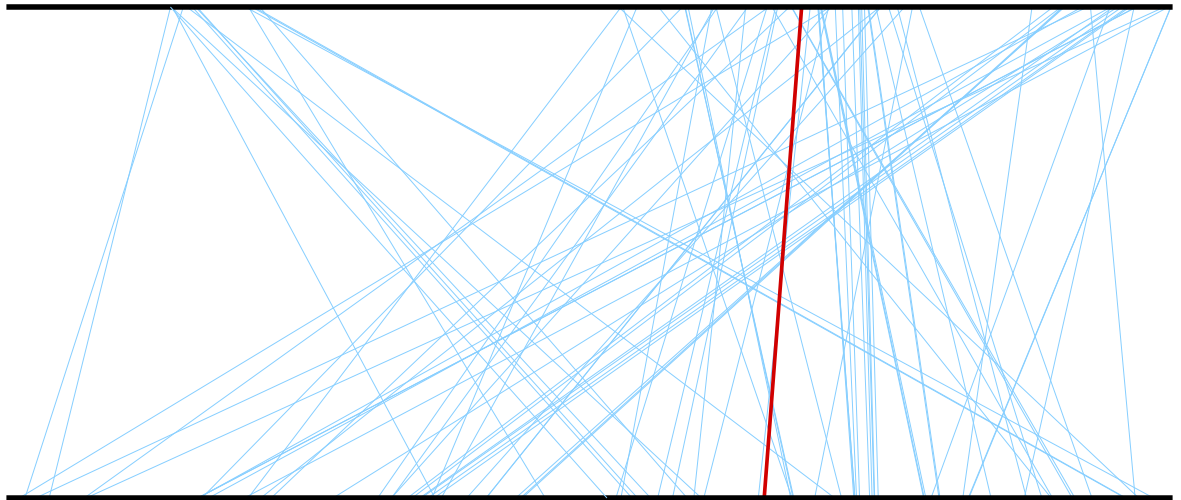
**Dr\_9**



**erbb4b ENSDARG00000061142 Dr\_9 40375891**

**erbb4a ENSORLG0000002392 OI\_2 21207374**

**OI\_2**



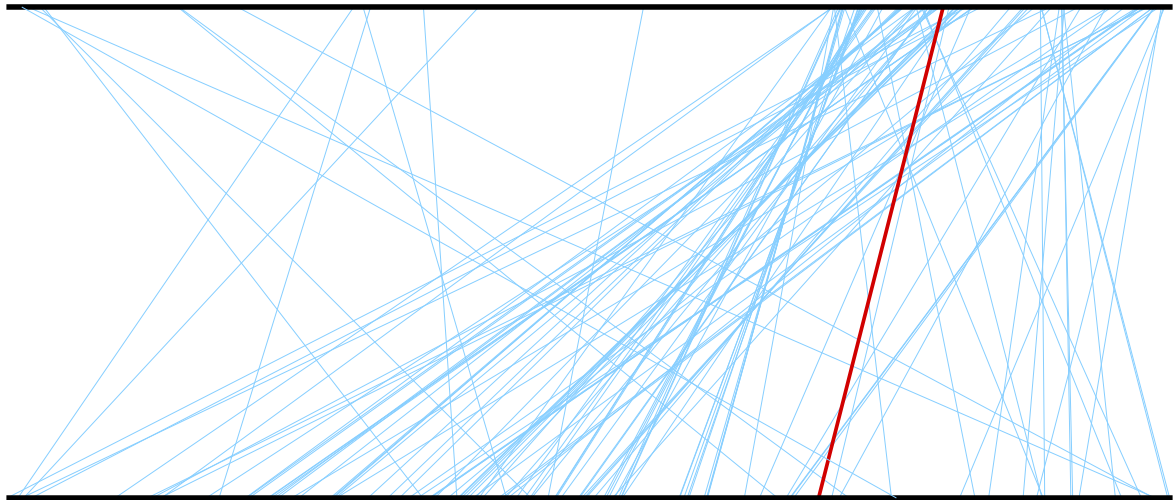
**OI\_21**

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**erbb4a ENSGACG00000014727 Ga\_1 22618498**

**Ga\_1**

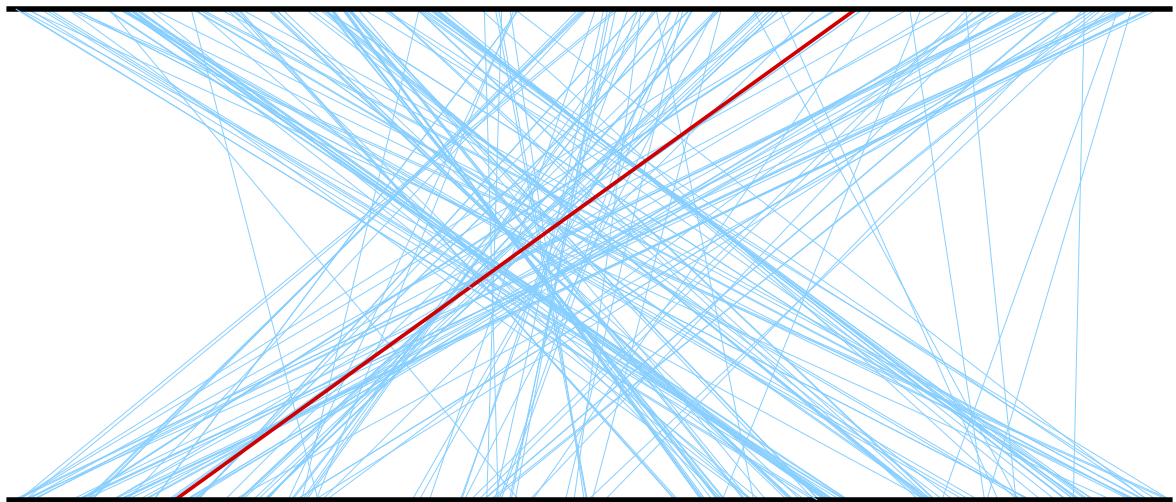
**Ga\_16**



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**erbb4b ENSTNIG00000016436 Tn\_2 15718810**

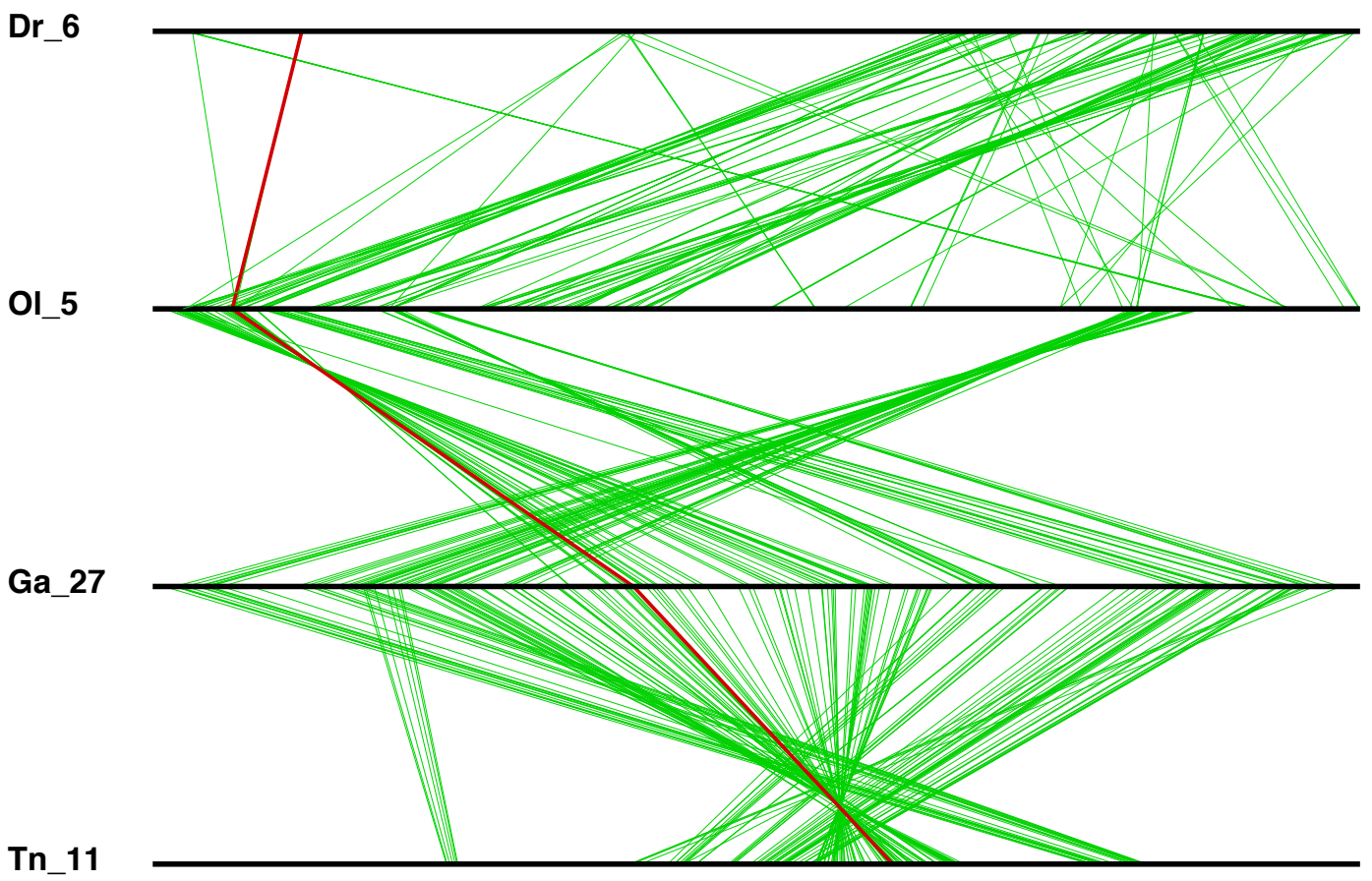
**Tn\_2**



**Tn\_3**

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# erbb3a





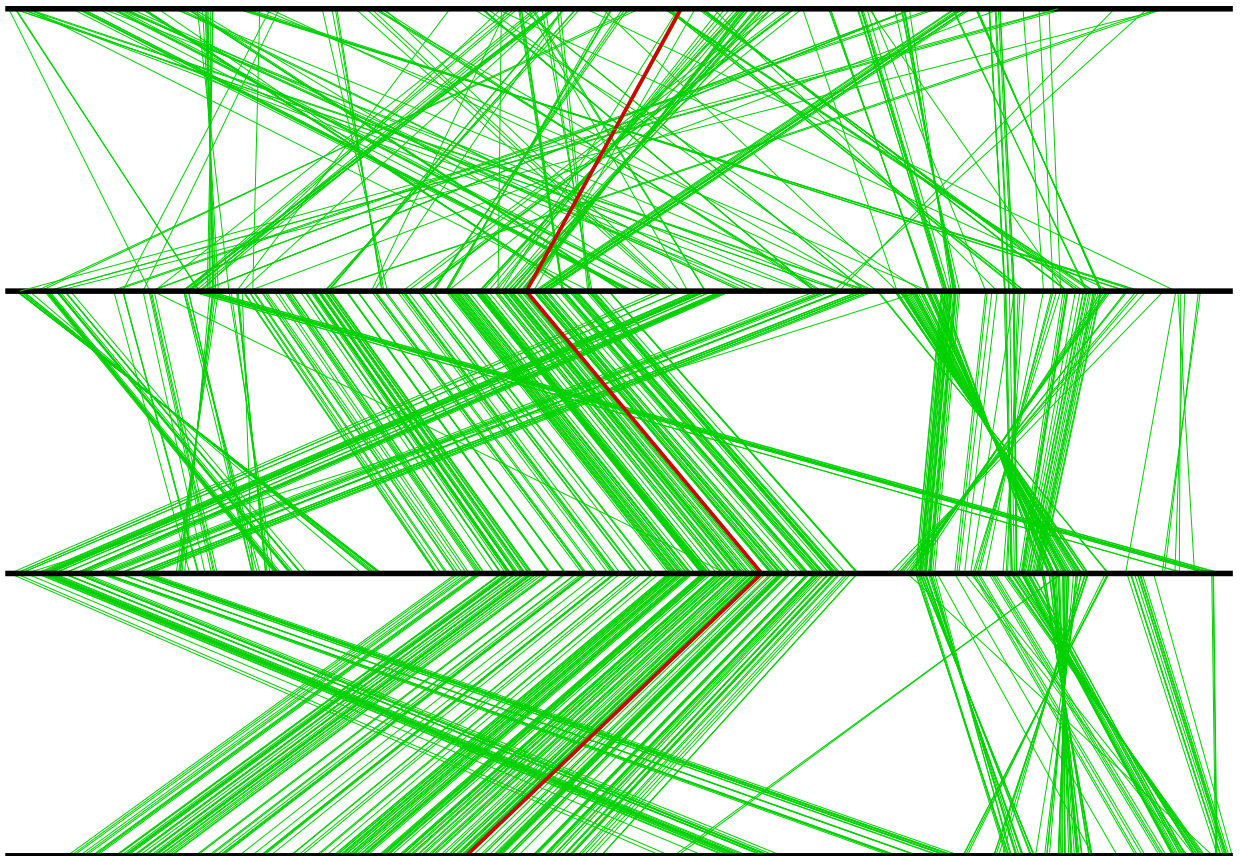
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Dr\_23

OI\_7

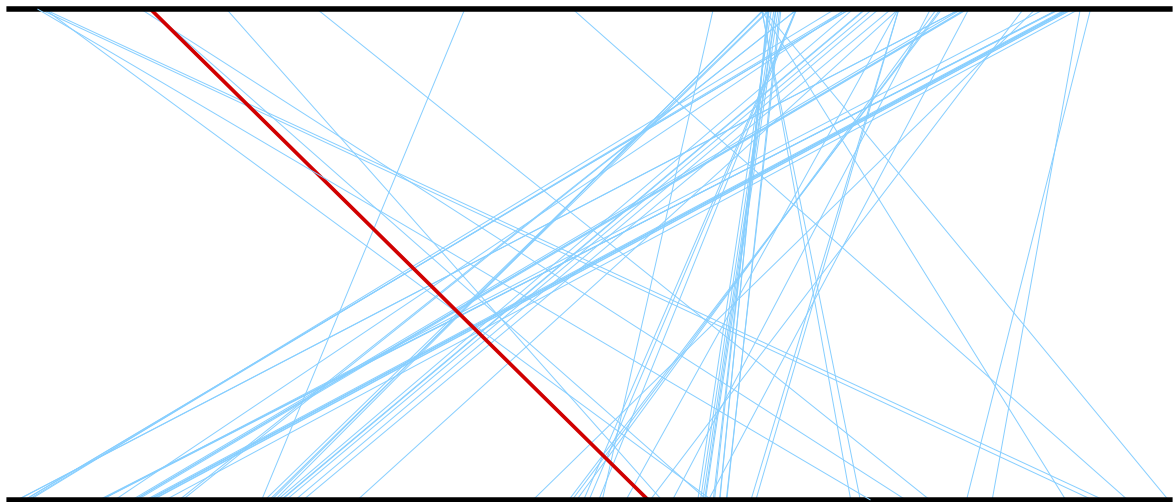
Ga\_12

Tn\_9



**erbb3a ENSDARG00000006202 Dr\_6 7406969**

**Dr\_6**

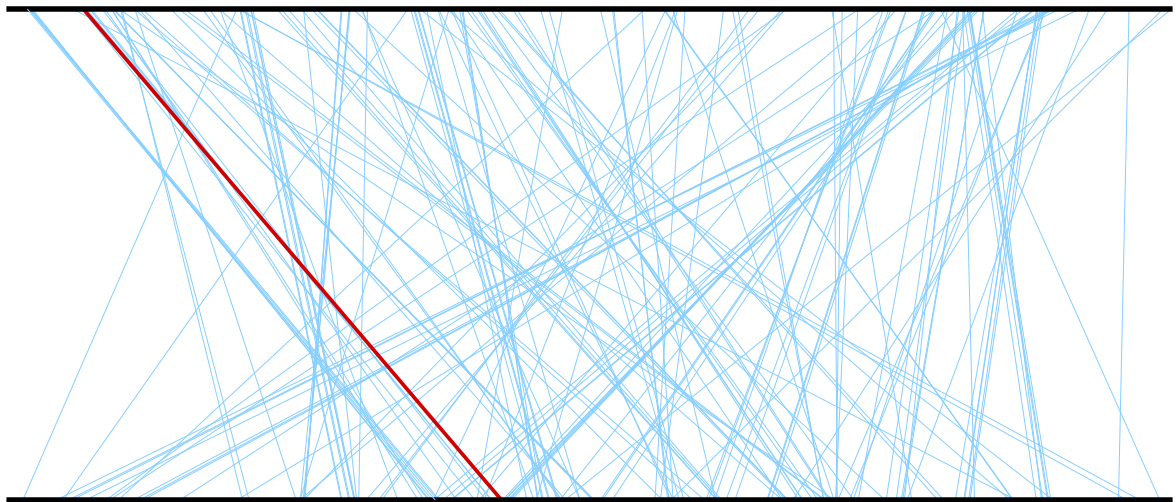


**Dr\_23**

**erbb3b ENSDARG000000036993 Dr\_23 25519750**

**erbb3a ENSORLG00000001520 OI\_5 2228251**

**OI\_5**



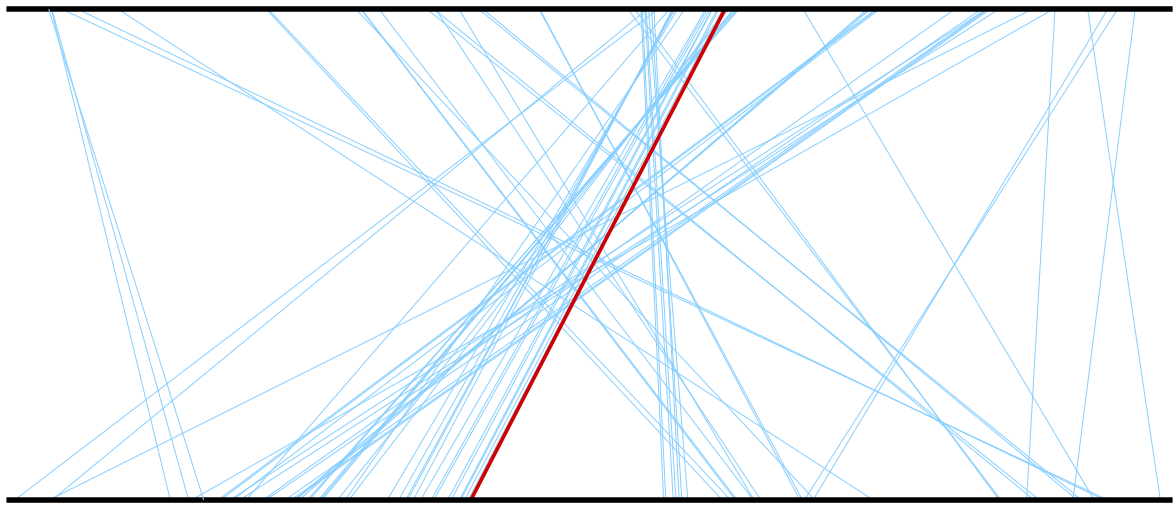
**OI\_7**

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**erbb3b ENSGACG00000009144 Ga\_12 11310665**

**Ga\_12**

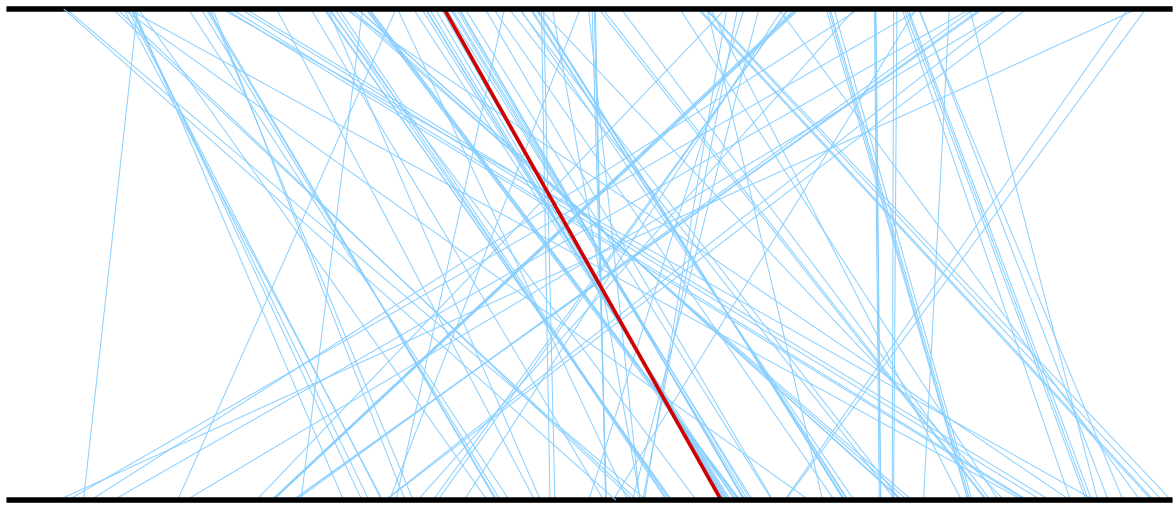
**Ga\_27**



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**Tn\_9**



**Tn\_11**

**erbb3a ENSTNIG00000014596 Tn\_11 7326419**

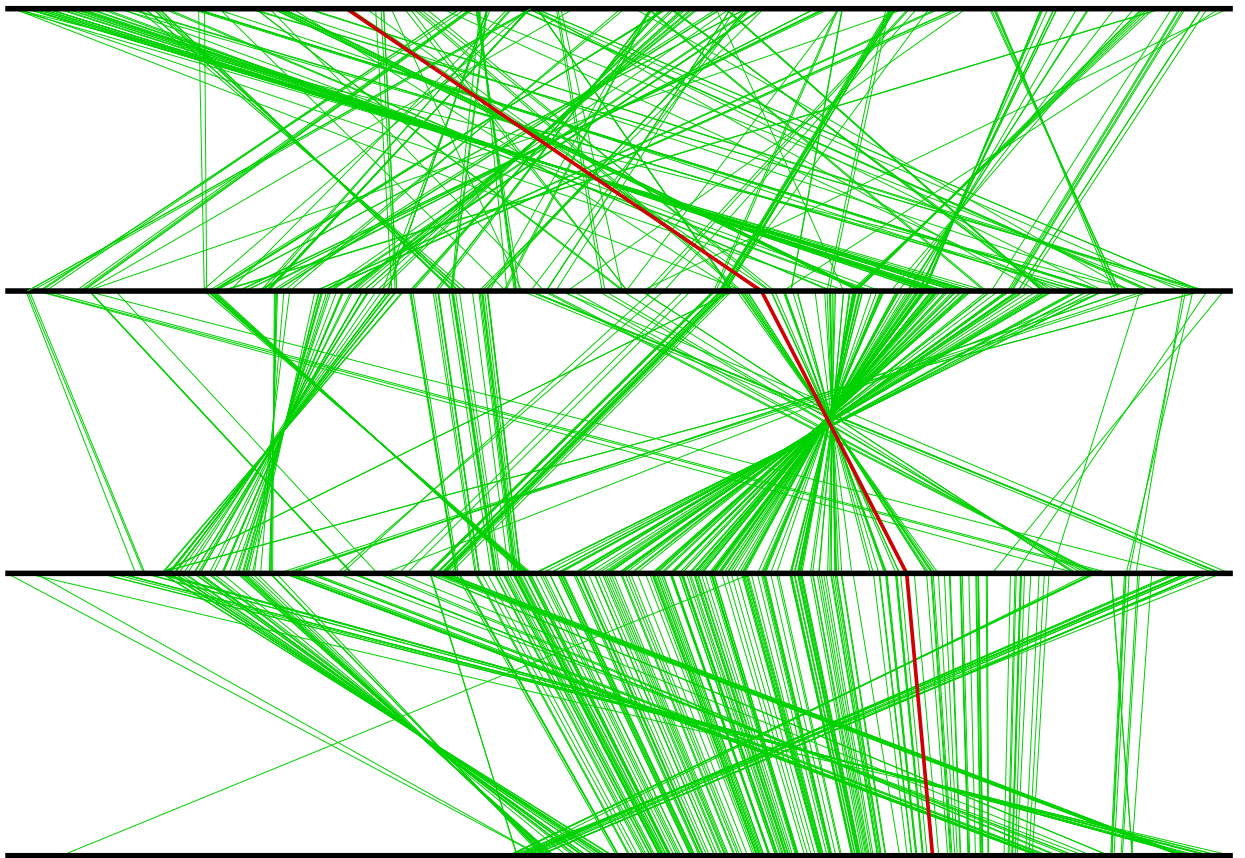
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Dr\_9

OI\_21

Ga\_16

Tn\_2

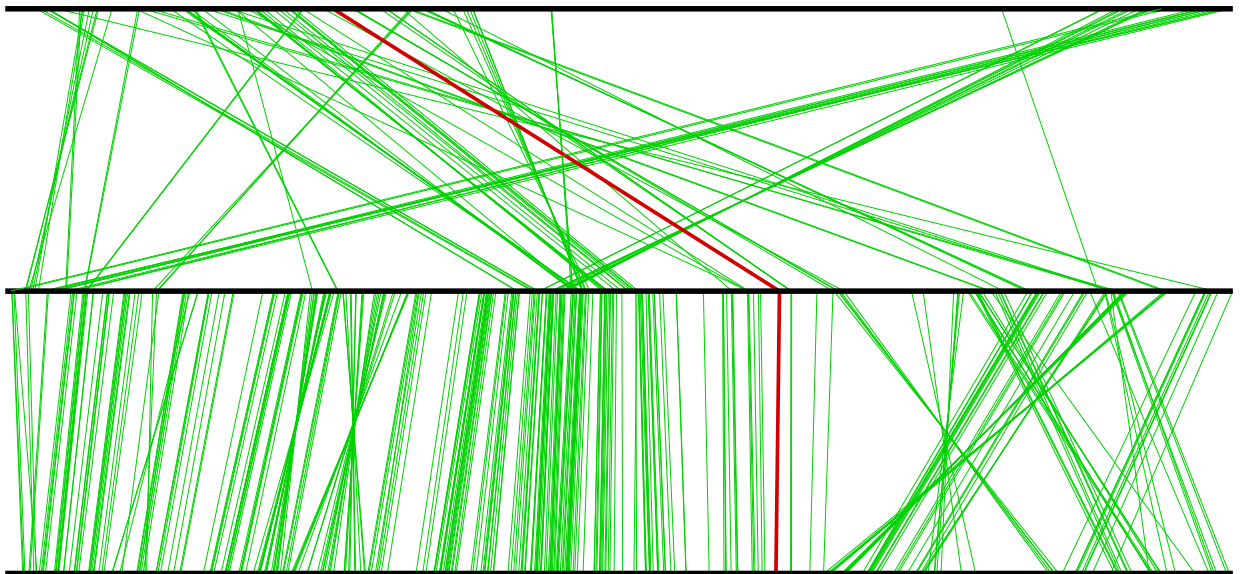


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Dr\_10

Ol\_12

Ga\_14

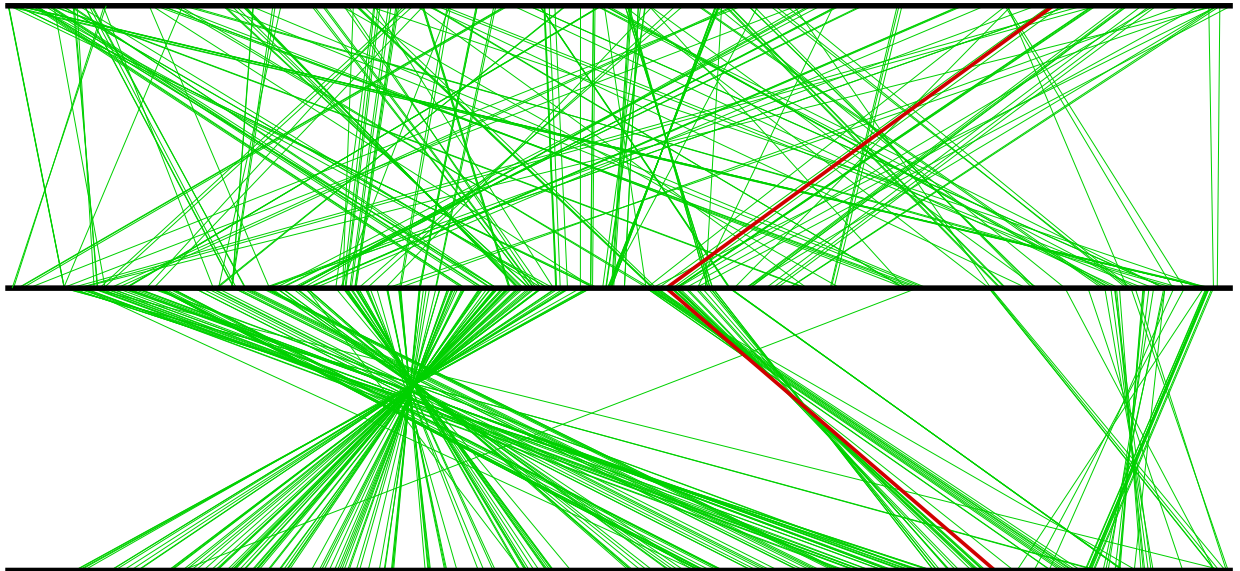


# epha4-1

Dr\_15

Ol\_13

Tn\_16





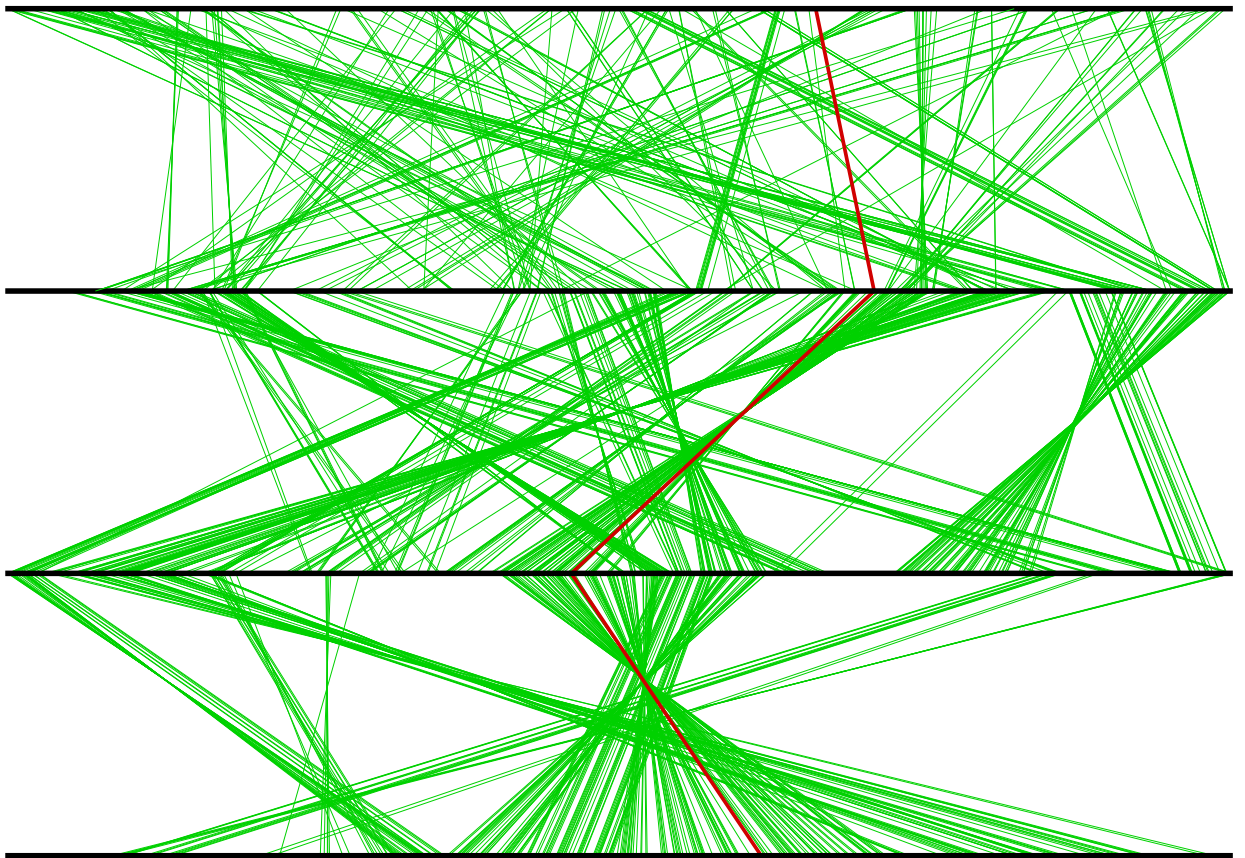
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Dr\_2

OI\_17

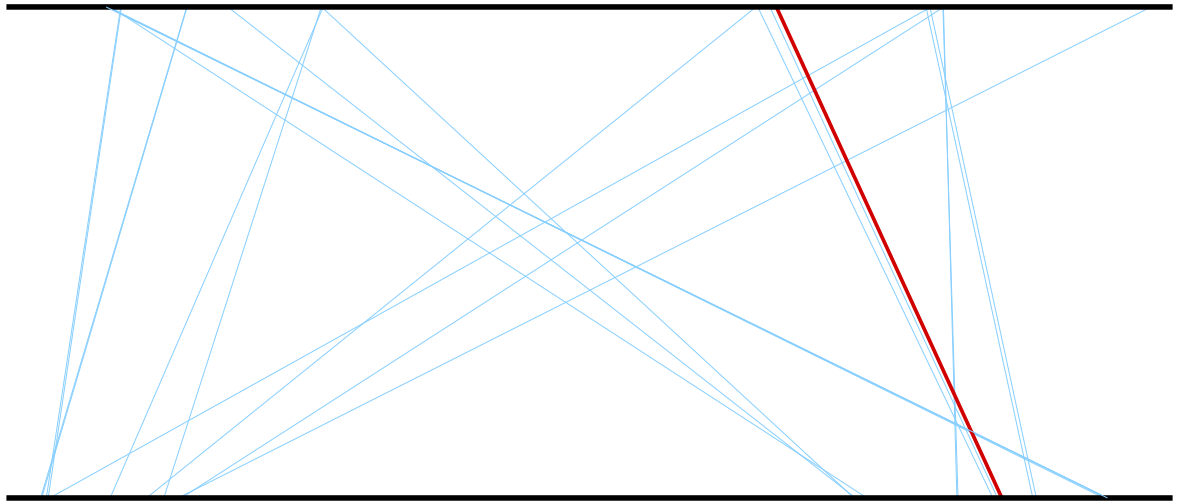
Ga\_3

Tn\_15



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**Dr\_2**

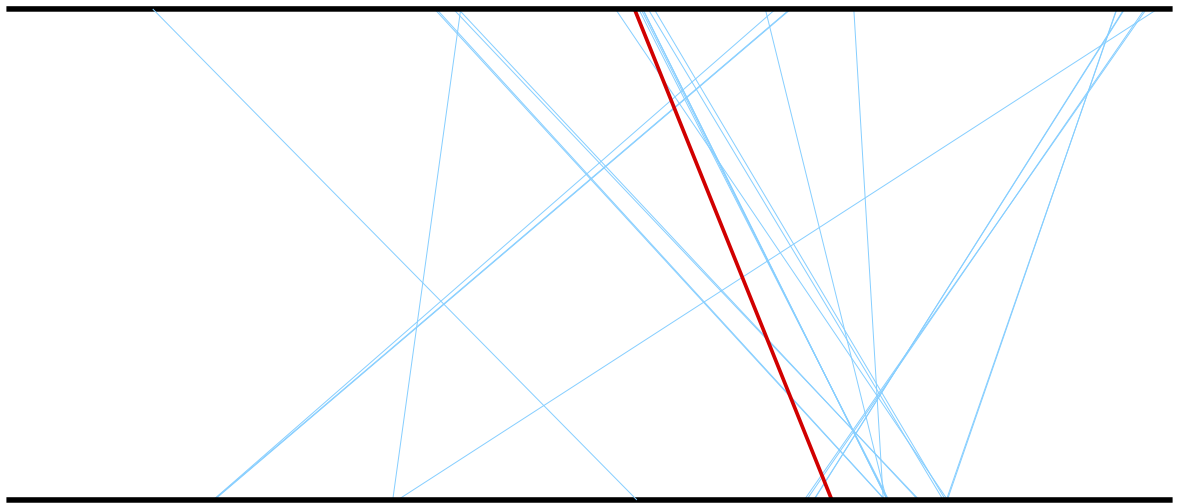


**Dr\_15**

**epha4l ENSDARG00000010767 Dr\_15 40471207**

**epha4a ENSORLG00000008991 OI\_13 17976743**

**OI\_13**



**OI\_17**

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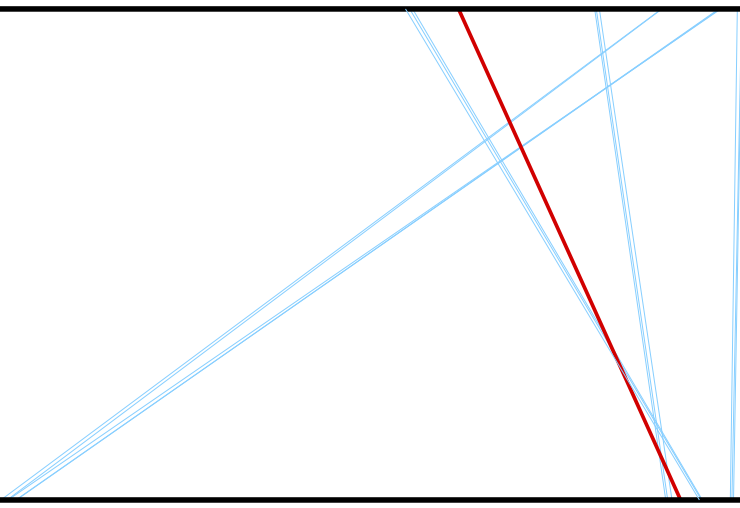
**Tn\_15**



**Tn\_16**



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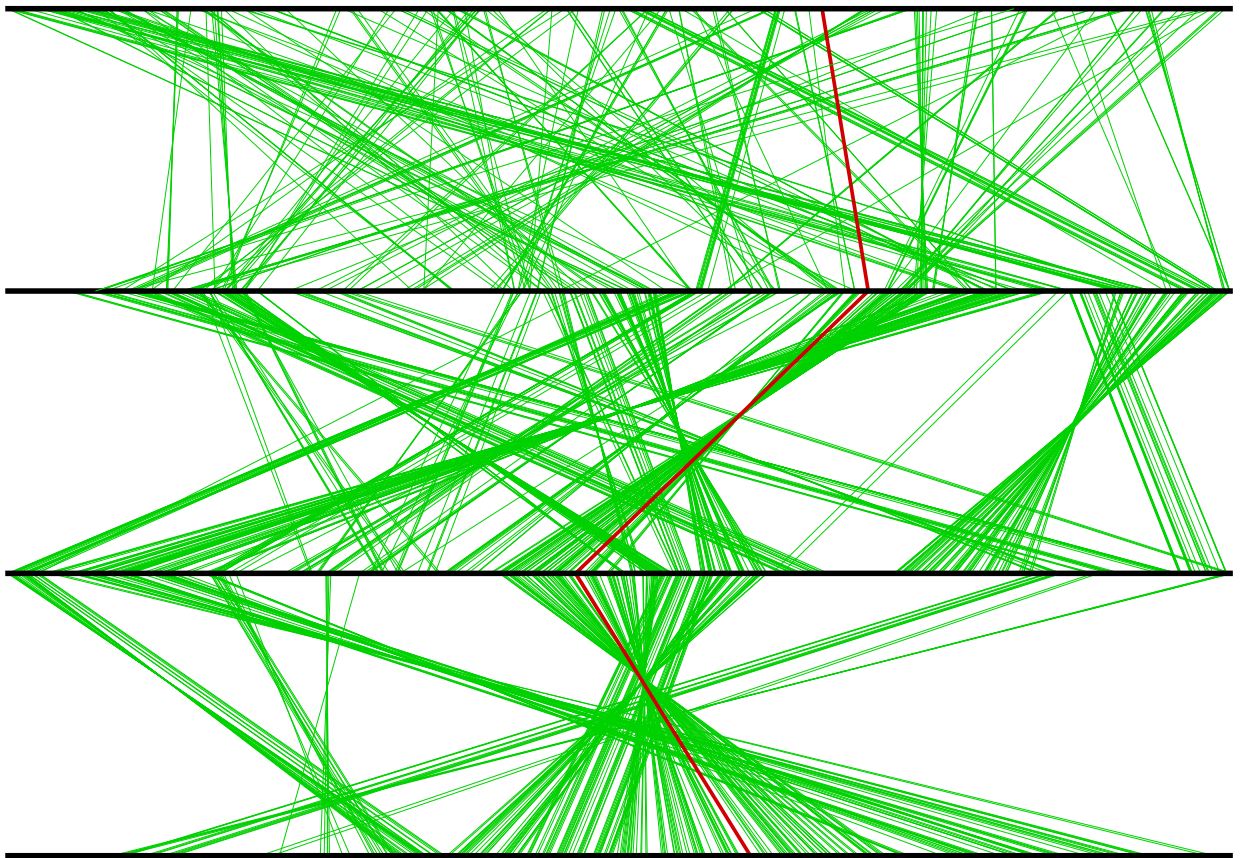
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Dr\_2

OI\_17

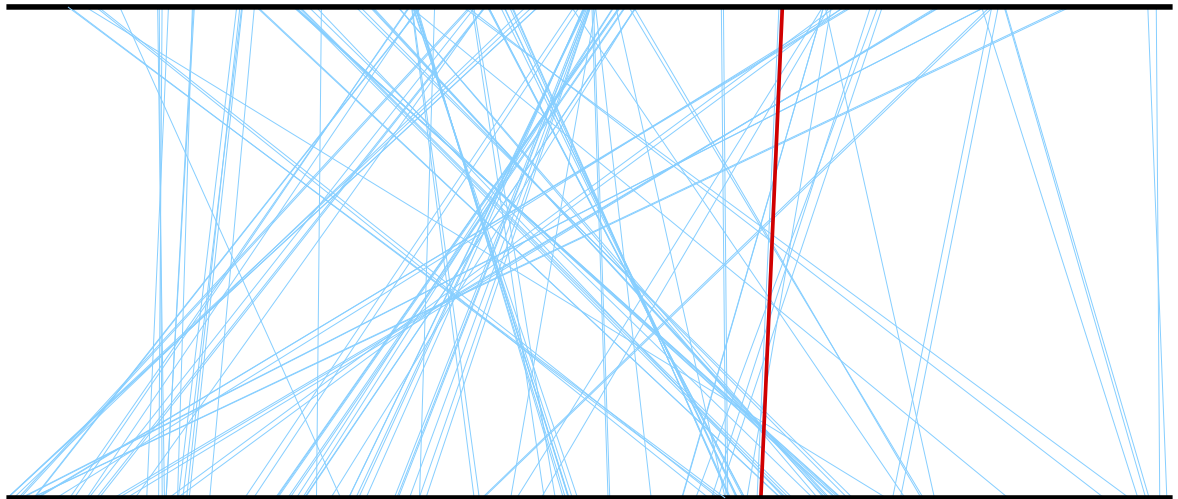
Ga\_3

Tn\_15



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**Dr\_2**



**Dr\_24**

**epha4lb ENSDARG00000020080 Dr\_24 28418728**

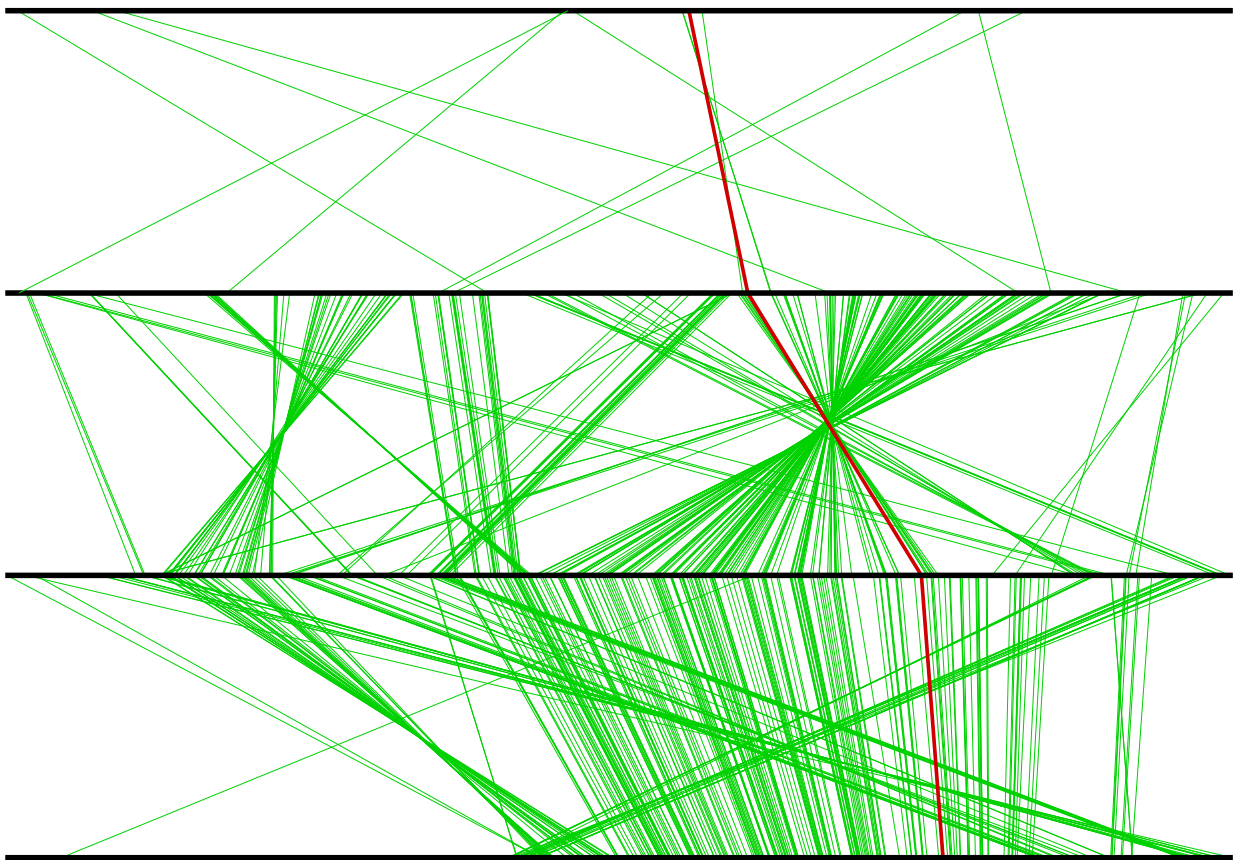
# epha6a

Dr\_1

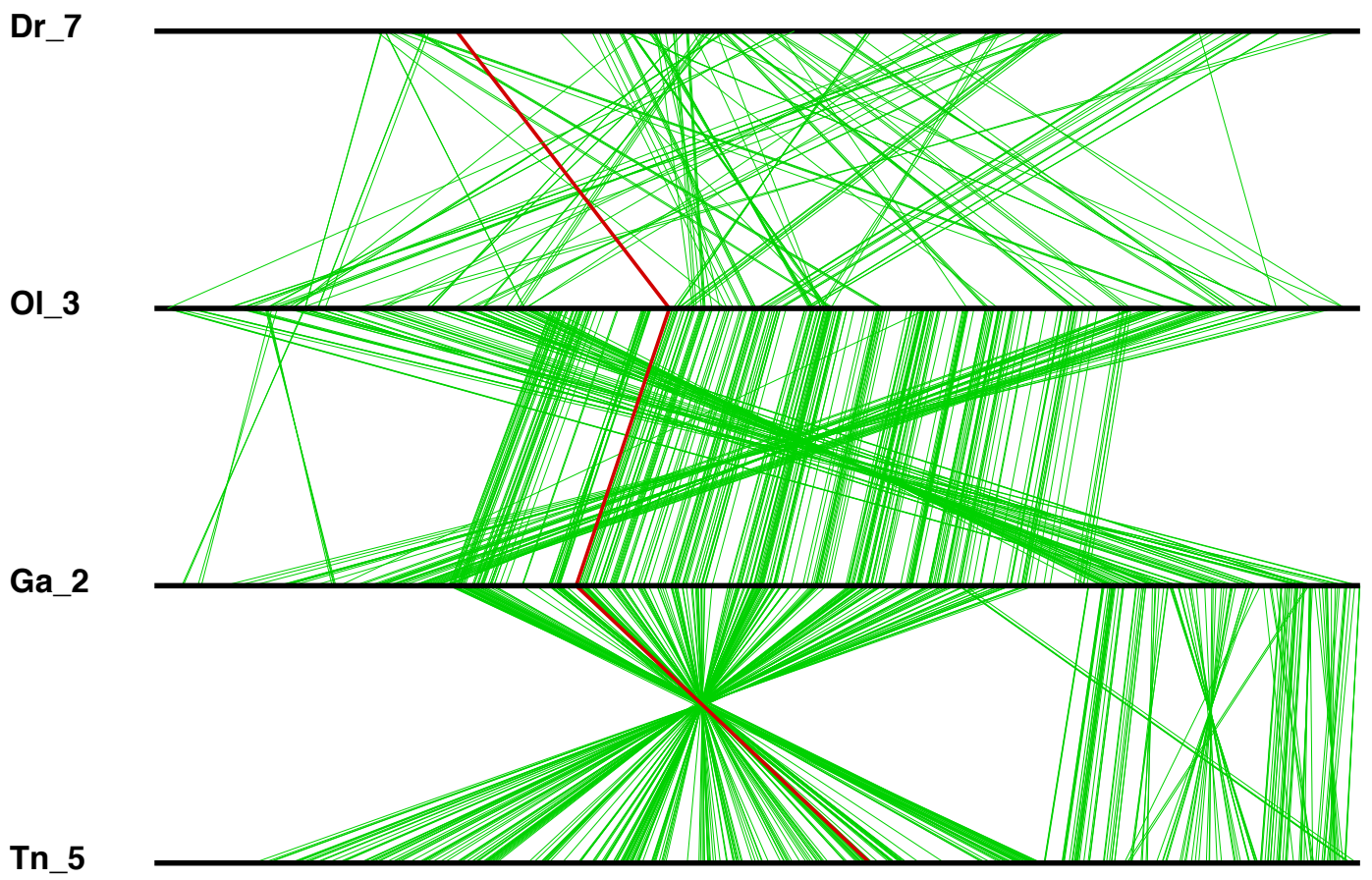
OI\_21

Ga\_16

Tn\_2



# epha6b

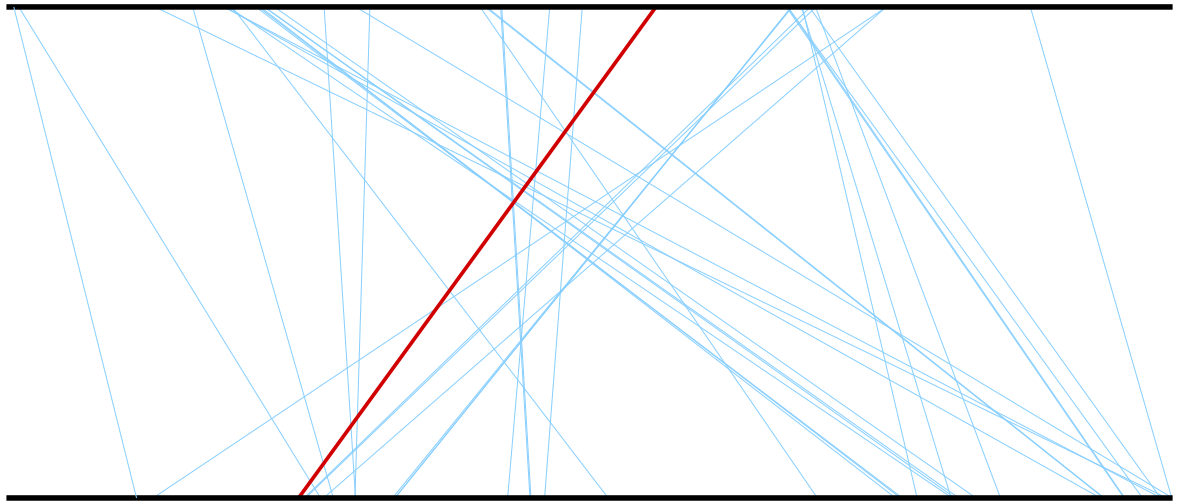




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**Dr\_1**

**Dr\_7**

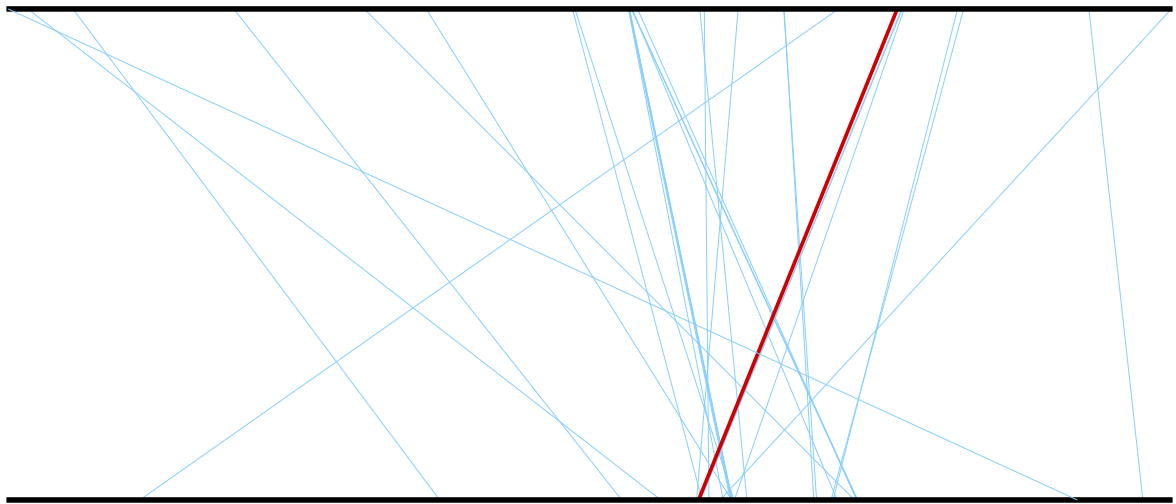


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**epha6a ENSTNIG00000002728 Tn\_2 16479690**

**Tn\_2**

**Tn\_5**



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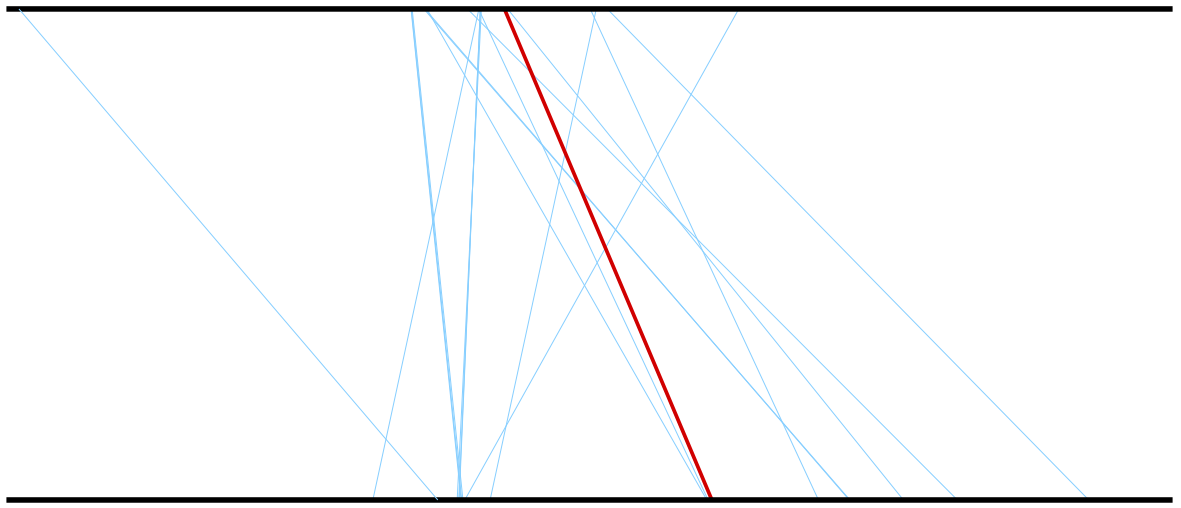
**OI\_3**



**OI\_21**



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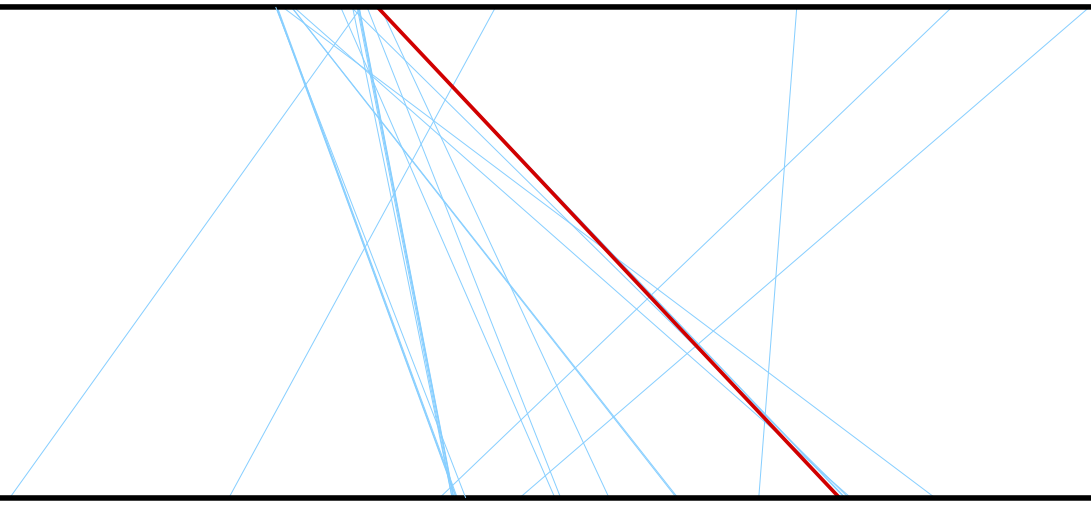
**Ga\_2**



**Ga\_16**



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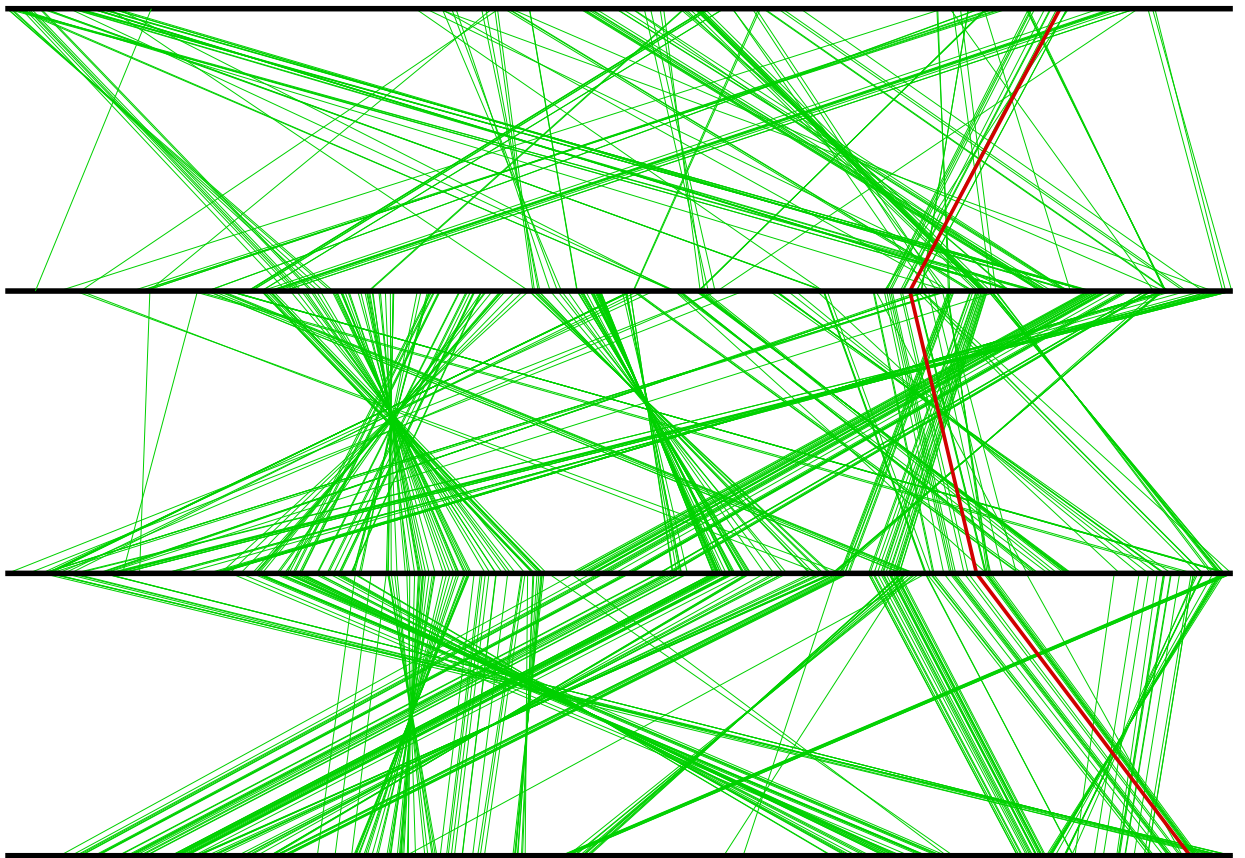
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Dr\_11

OI\_5

Ga\_17

Tn\_11

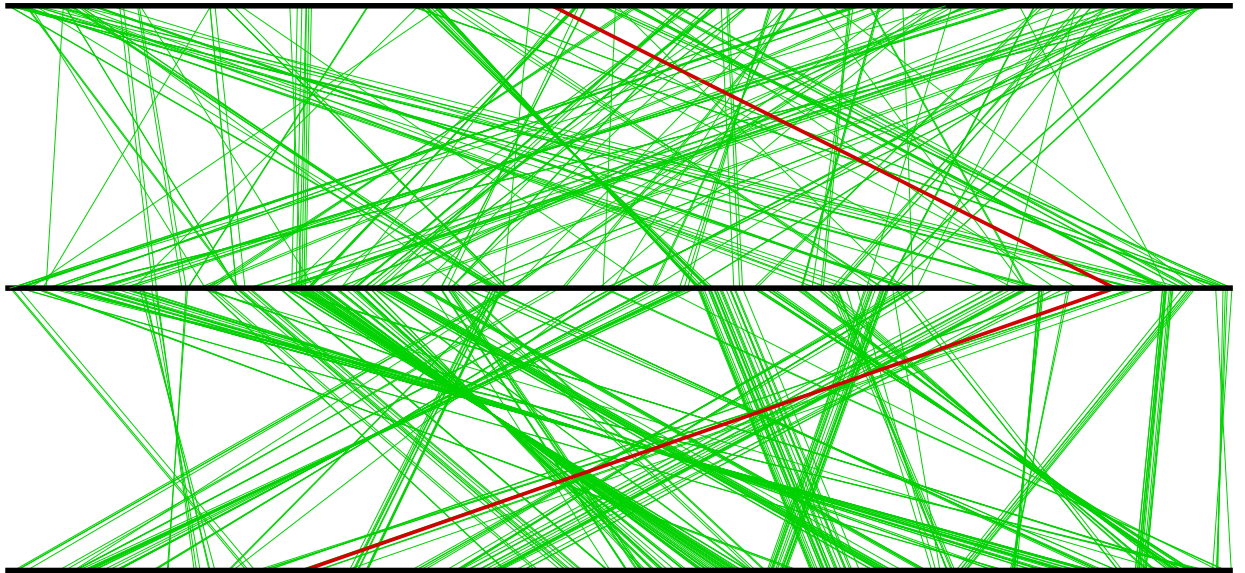


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Dr\_20

OI\_24

Ga\_18

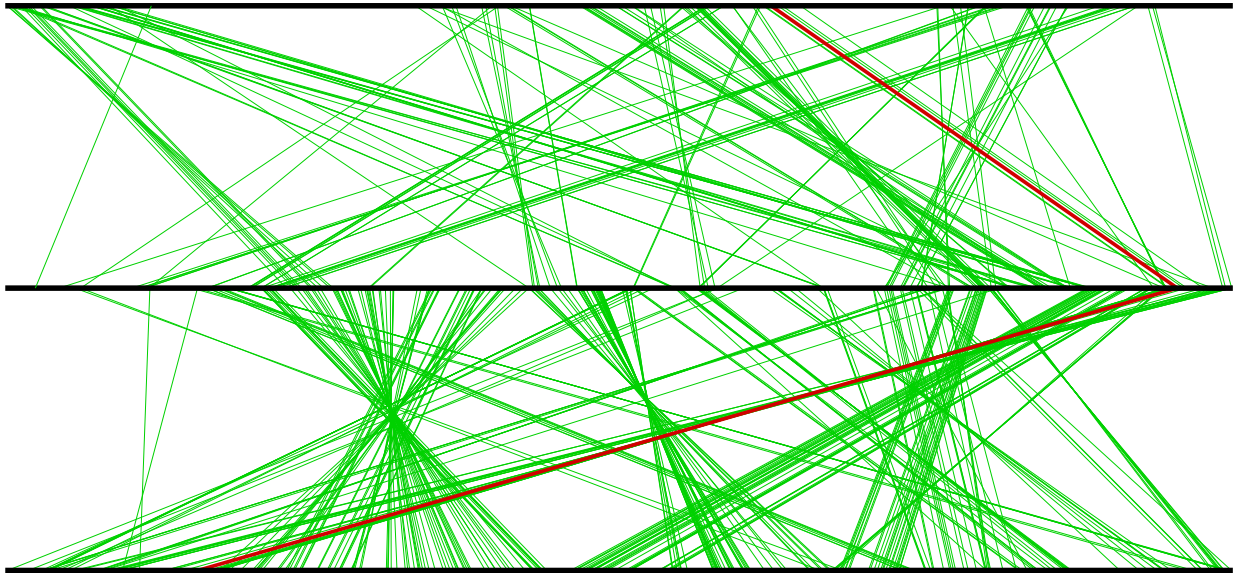


# ephb2a

Dr\_11

OI\_5

Ga\_17

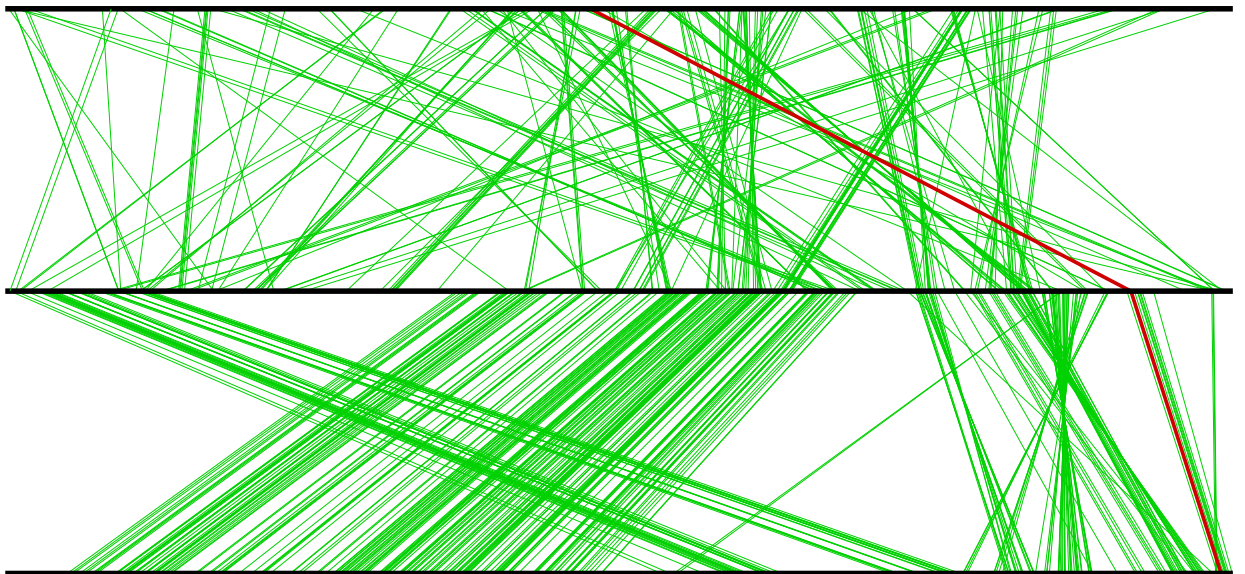


# ephb2b

Dr\_23

Ga\_12

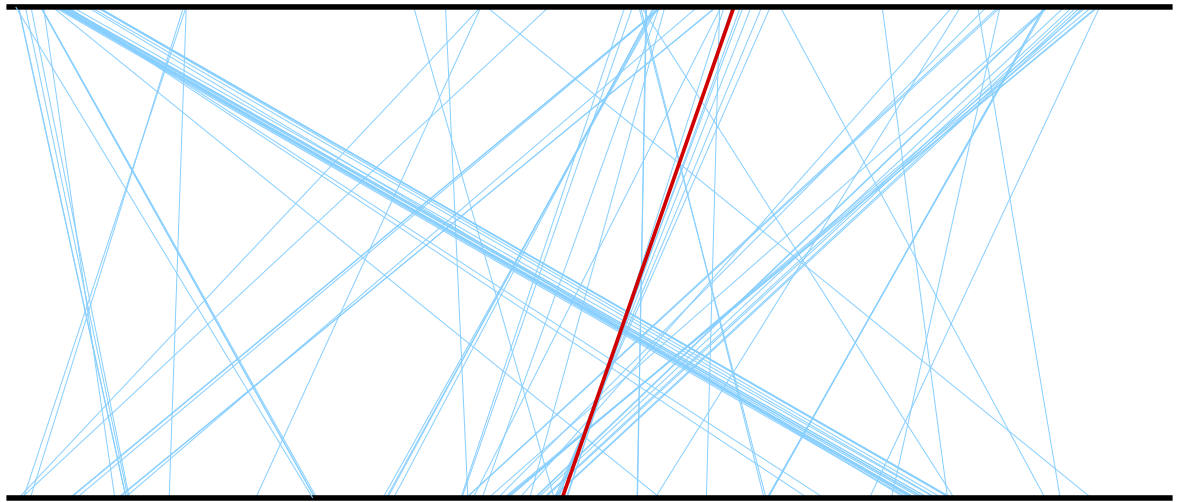
Tn\_9





**ephb2a ENSDARG00000021539 Dr\_11 29094981**

**Dr\_11**



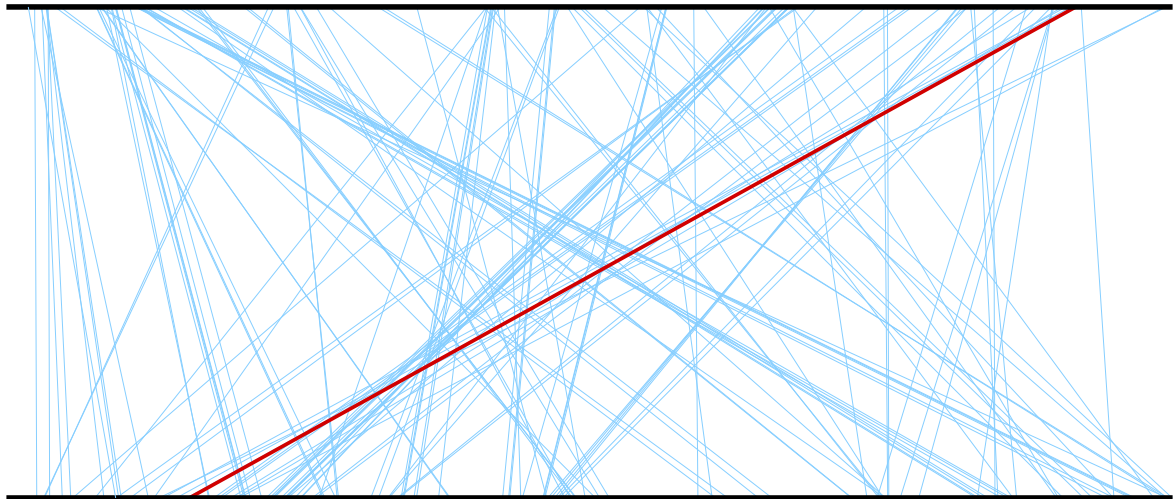
**Dr\_23**

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**ephb2b ENSGACG00000012702 Ga\_12 16831066**

**Ga\_12**

**Ga\_17**



**ephb2a ENSGACG00000004496 Ga\_17 2290295**

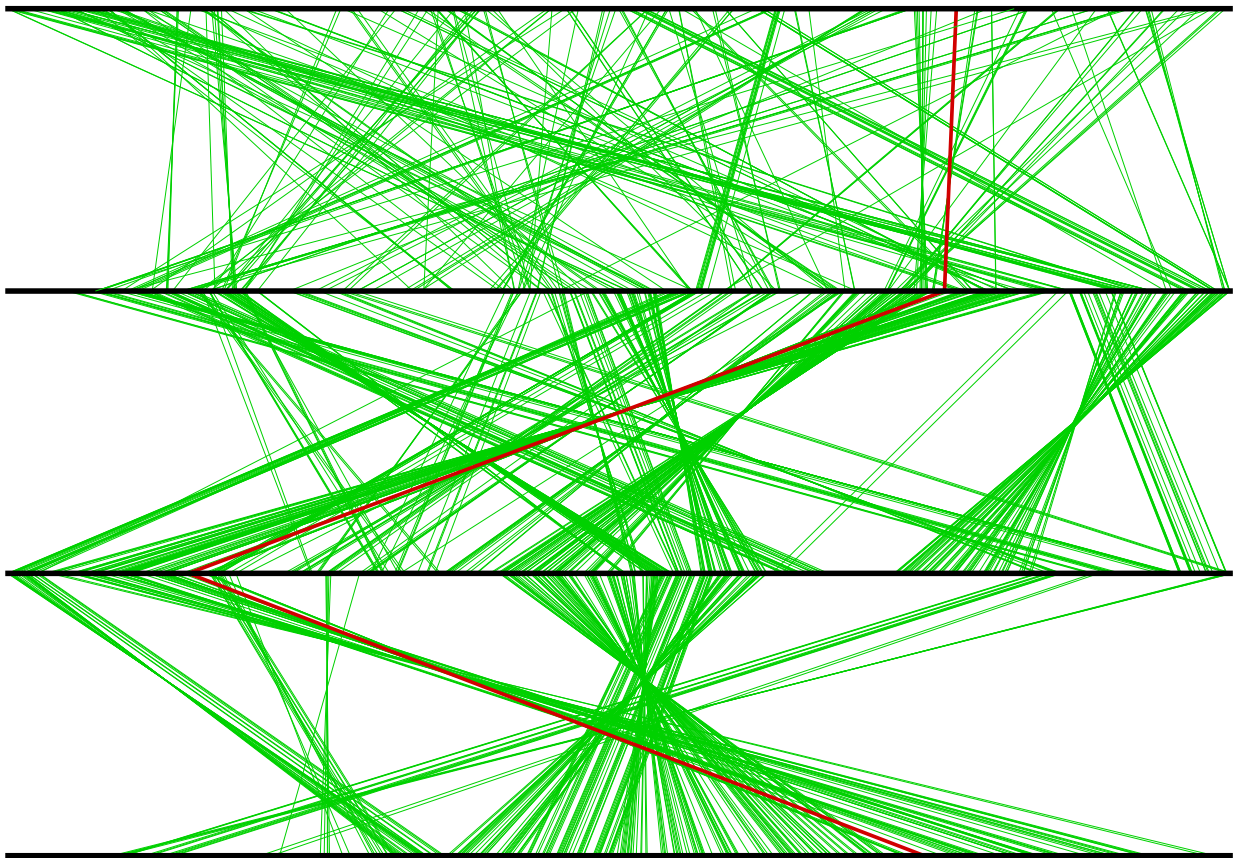
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Dr\_2

OI\_17

Ga\_3

Tn\_15

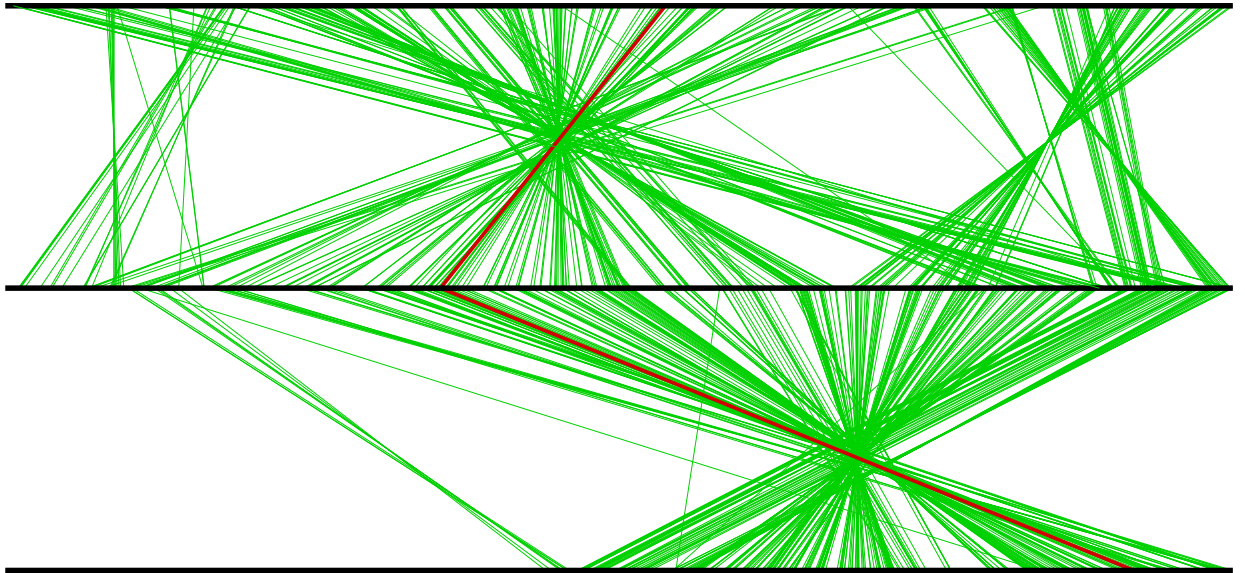


# ephb1b

OI\_4

Ga\_8

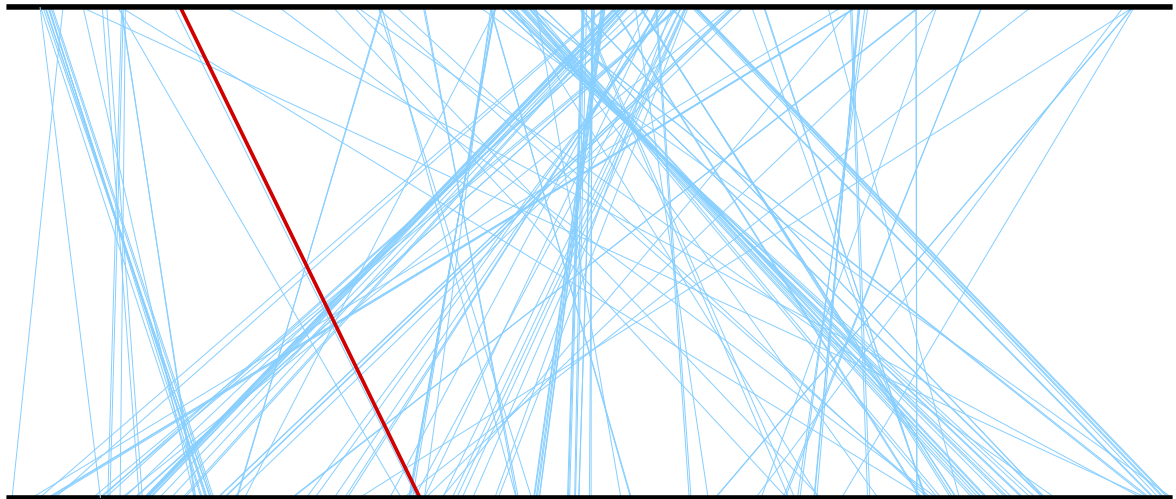
Tn\_1



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**Ga\_3**

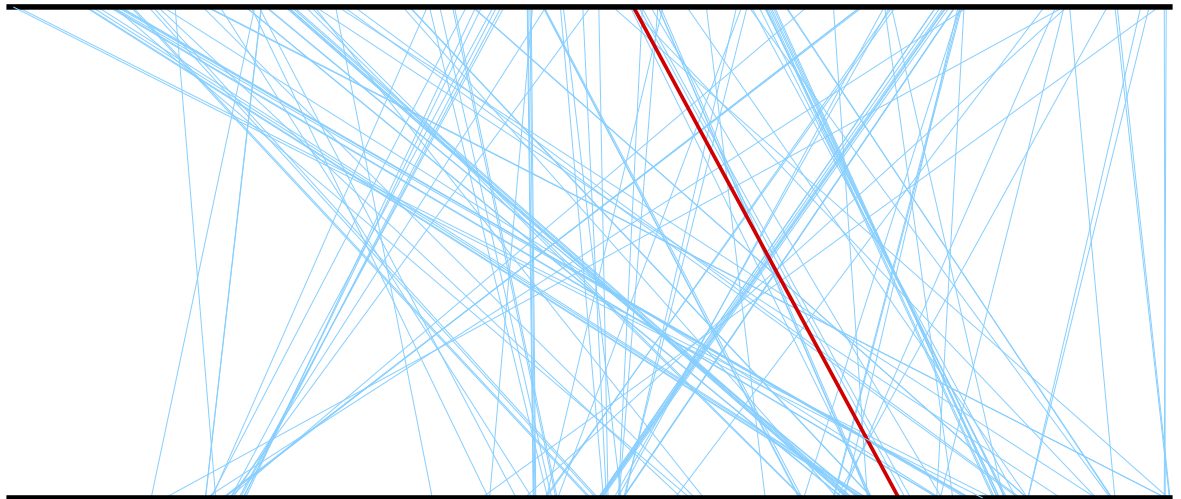
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**OI\_4**



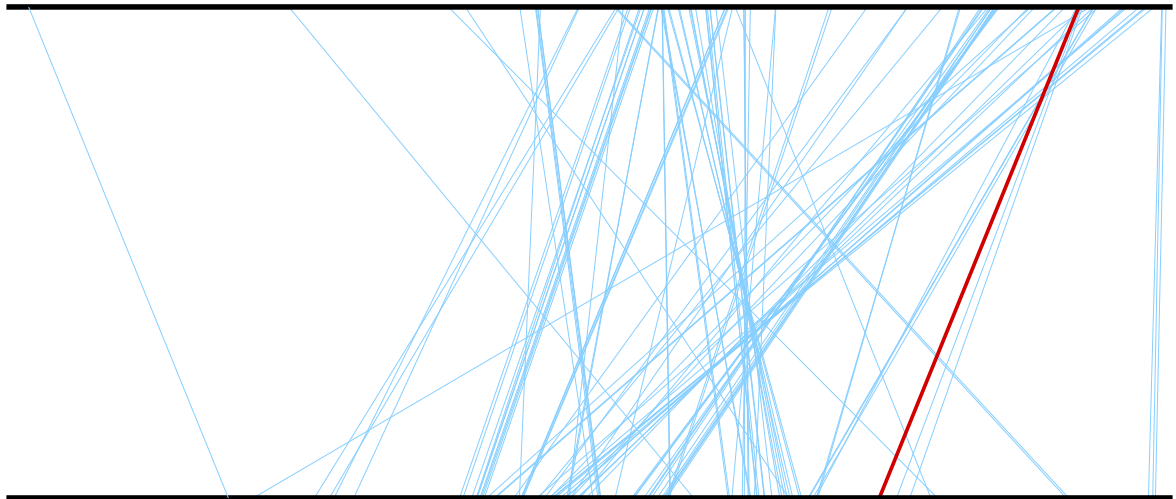
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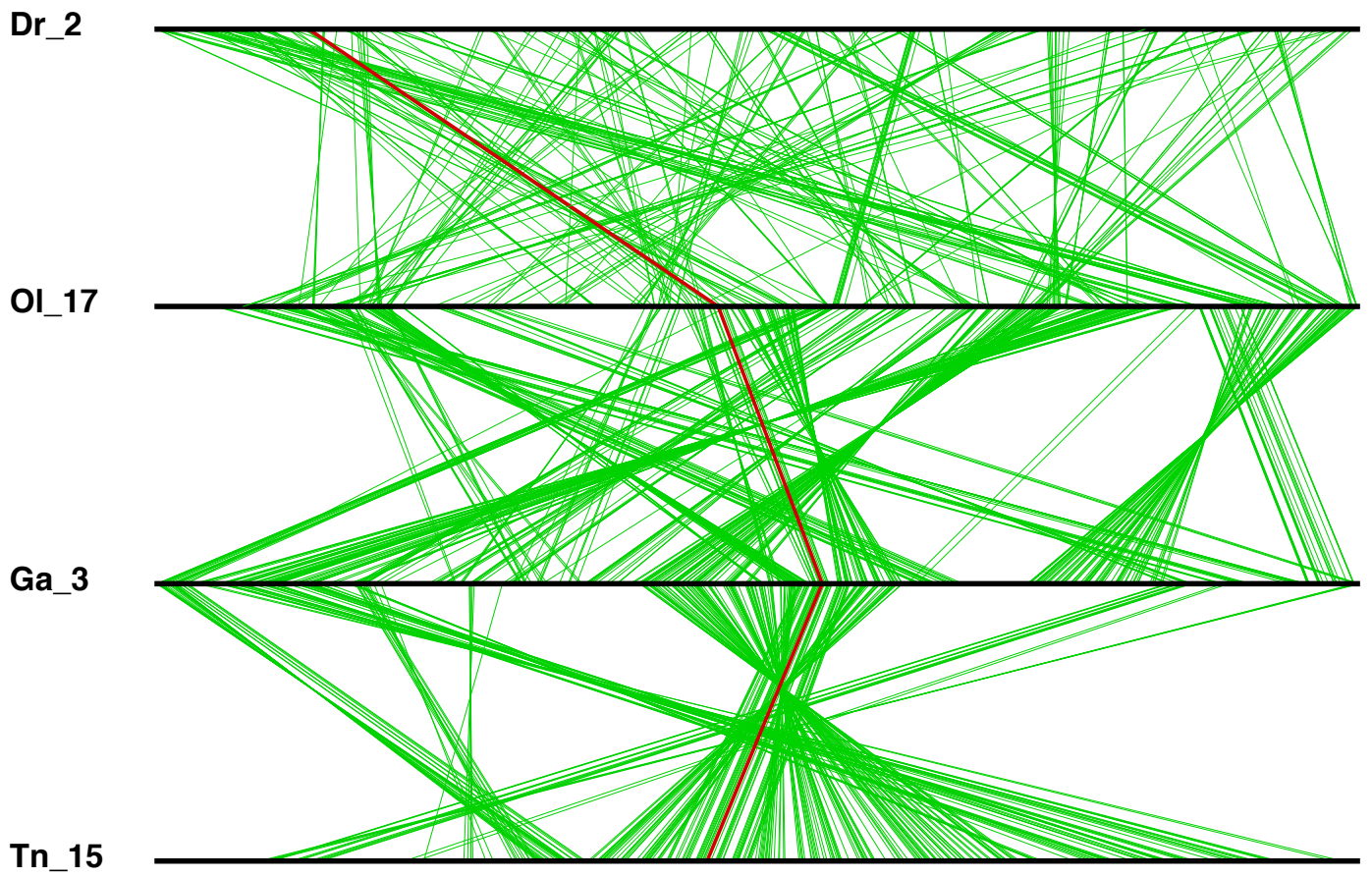
**Tn\_1**

**Tn\_15**



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# ephb3a





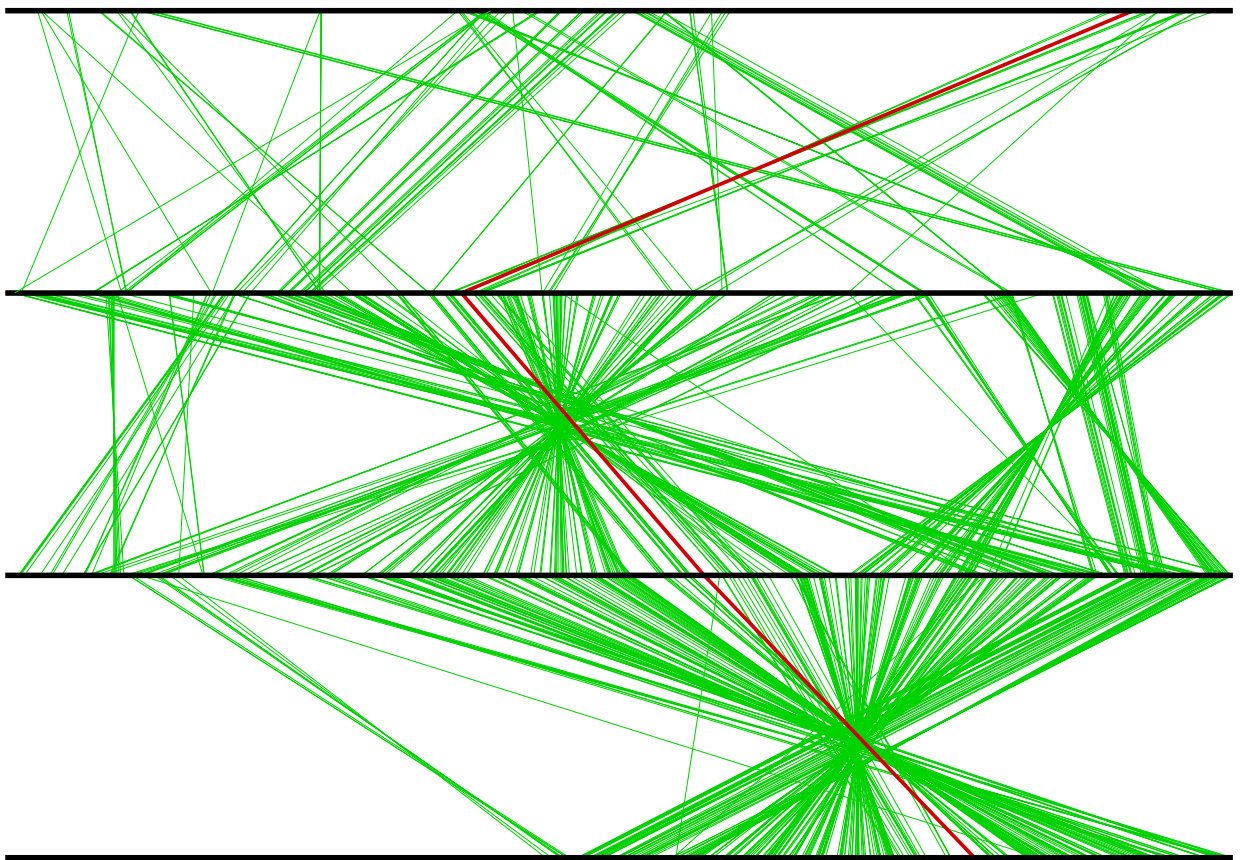
# ephb3b

Dr\_22

OI\_4

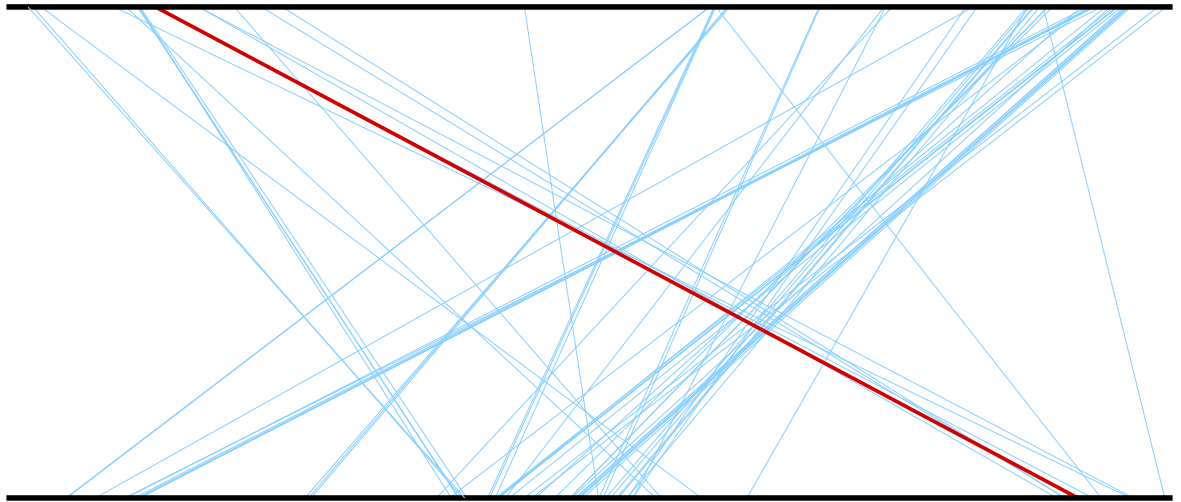
Ga\_8

Tn\_1



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**Dr\_2**

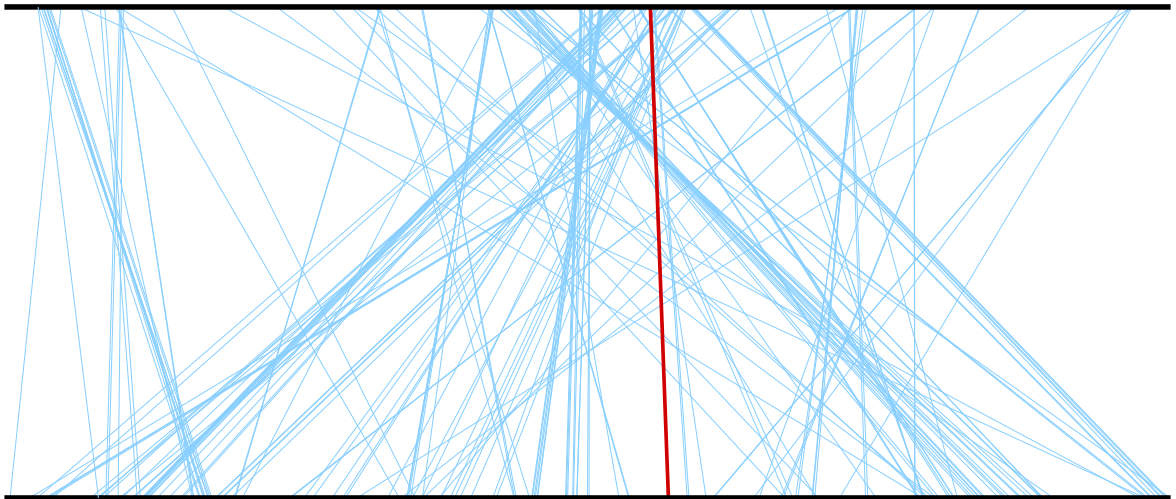


**Dr\_22**

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**Ga\_3**

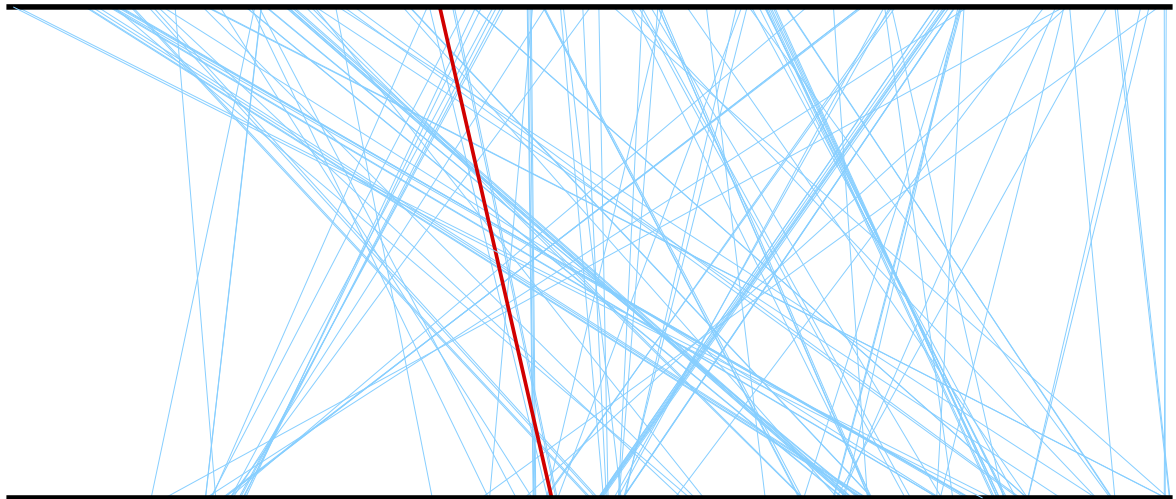


**Ga\_8**

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**OI\_4**



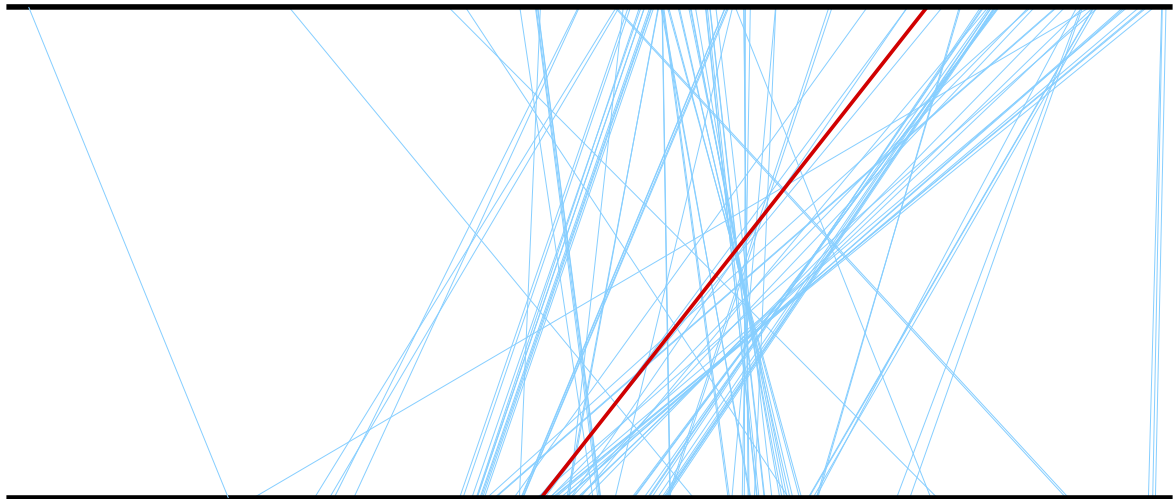
**OI\_17**

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**Tn\_1**

**Tn\_15**



**ephb3a ENSTNIG00000007814 Tn\_15 3354444**

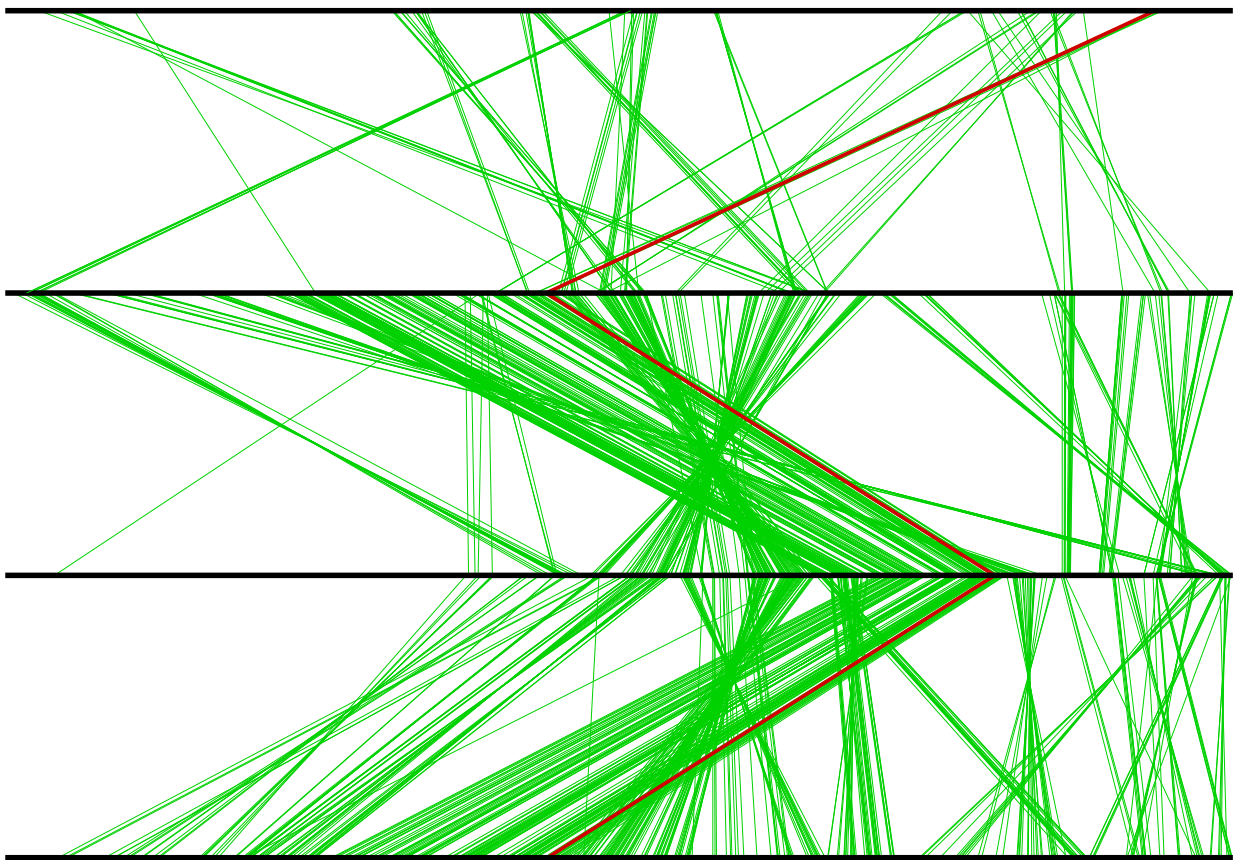
# ephb4a

Dr\_5

OI\_14

Ga\_7

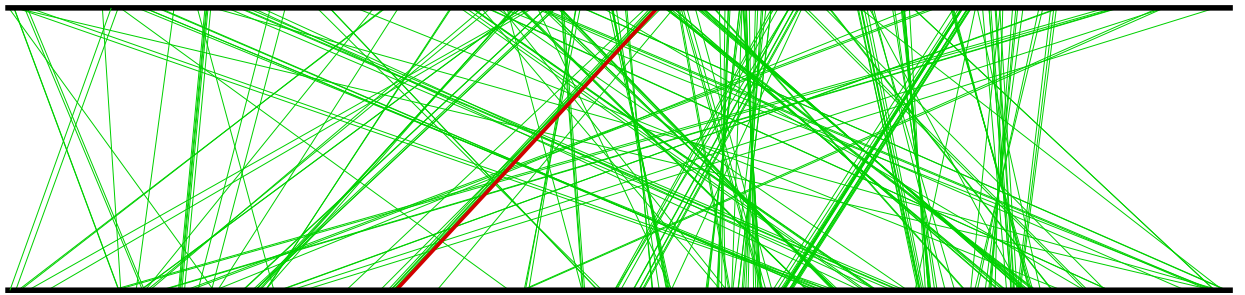
Tn\_7



# epha2a

Dr\_23

Ga\_12



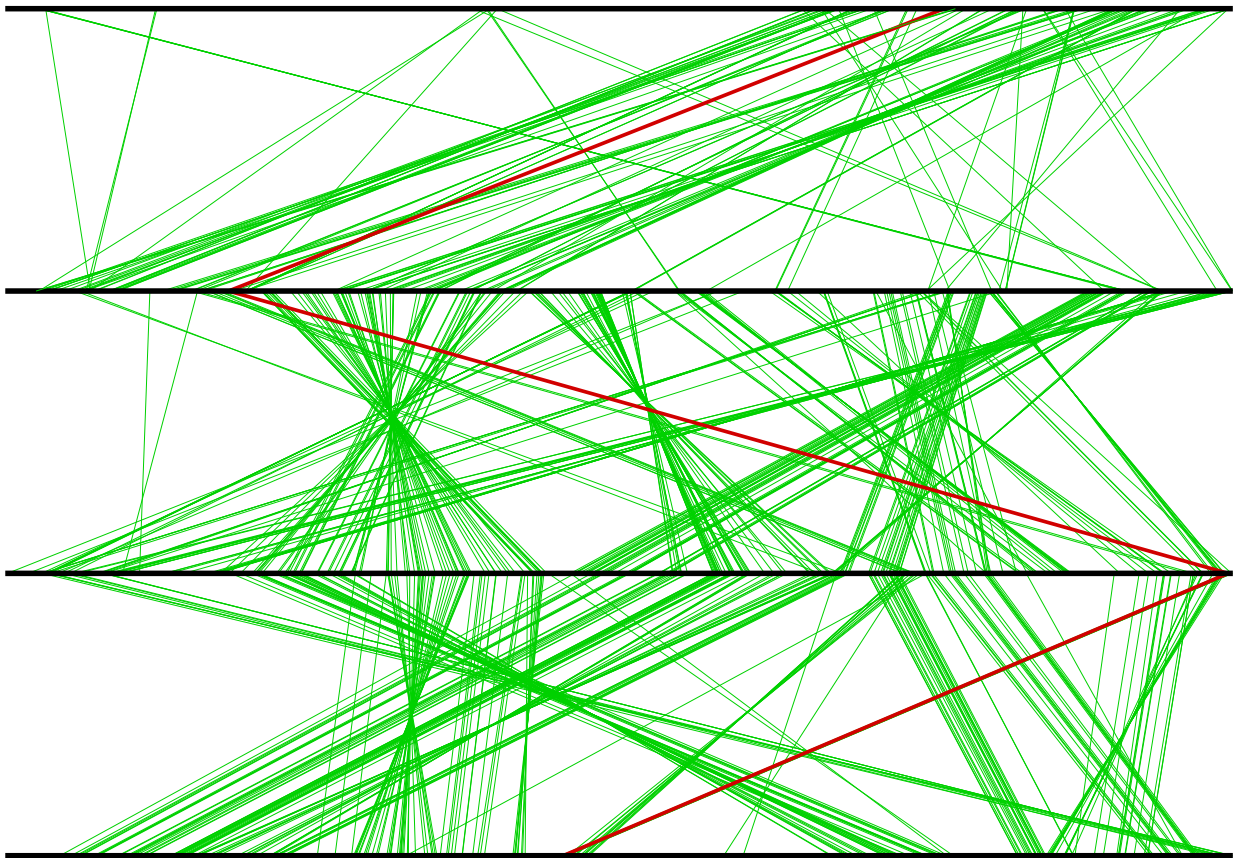
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Dr\_6

OI\_5

Ga\_17

Tn\_11

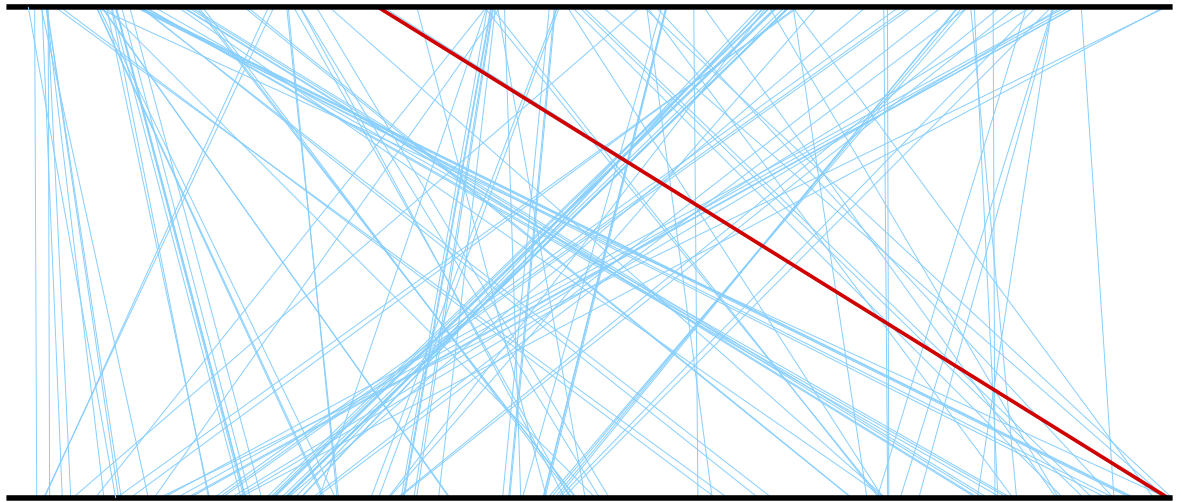




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**Ga\_12**

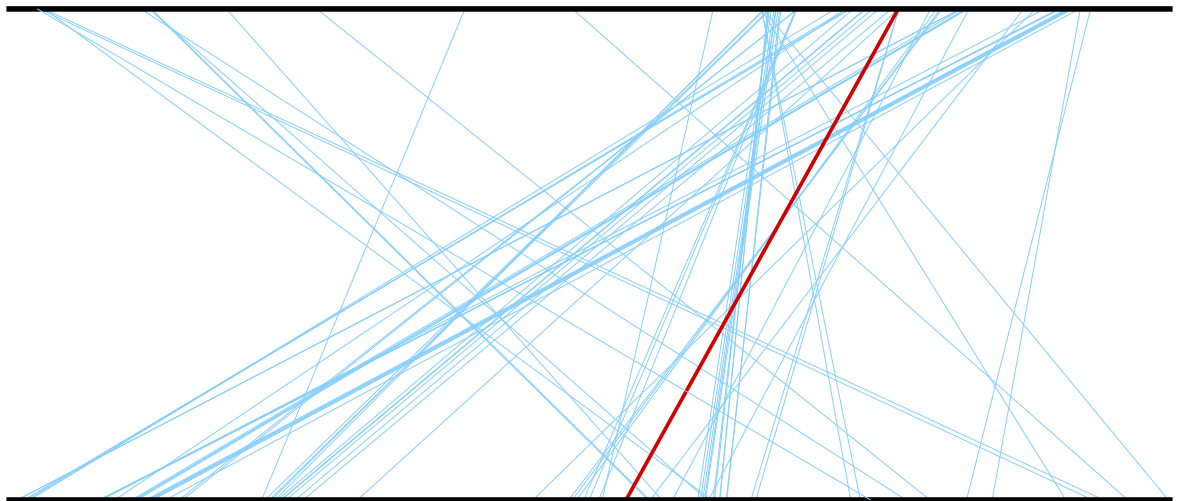
**Ga\_17**



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**Dr\_6**



**Dr\_23**

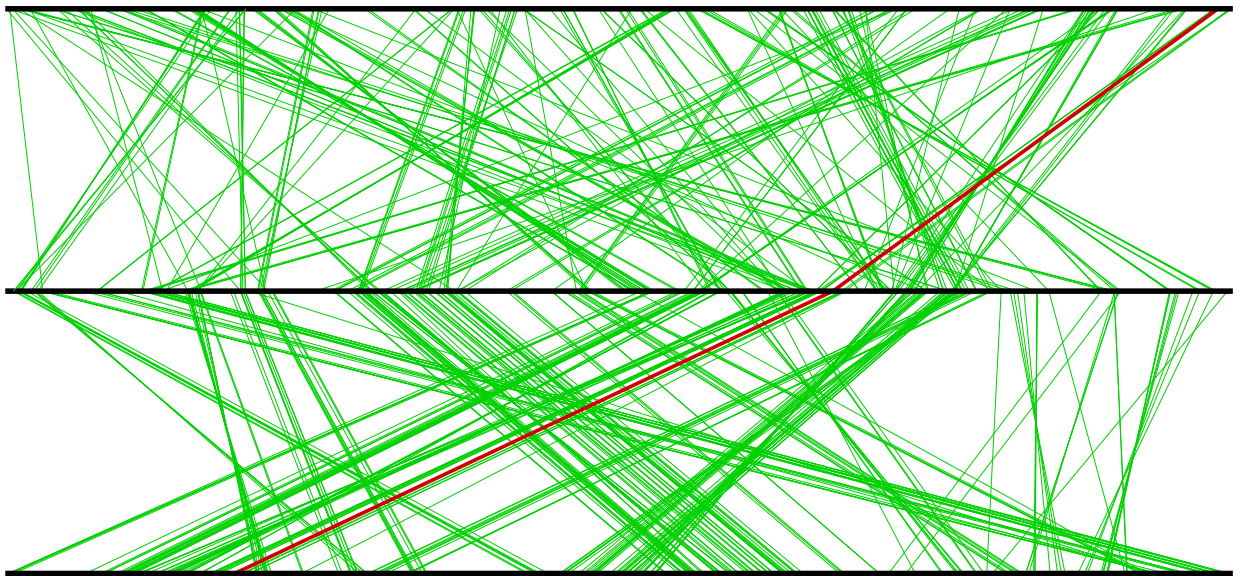
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# epha10

Dr\_19

Ol\_11

Ga\_10



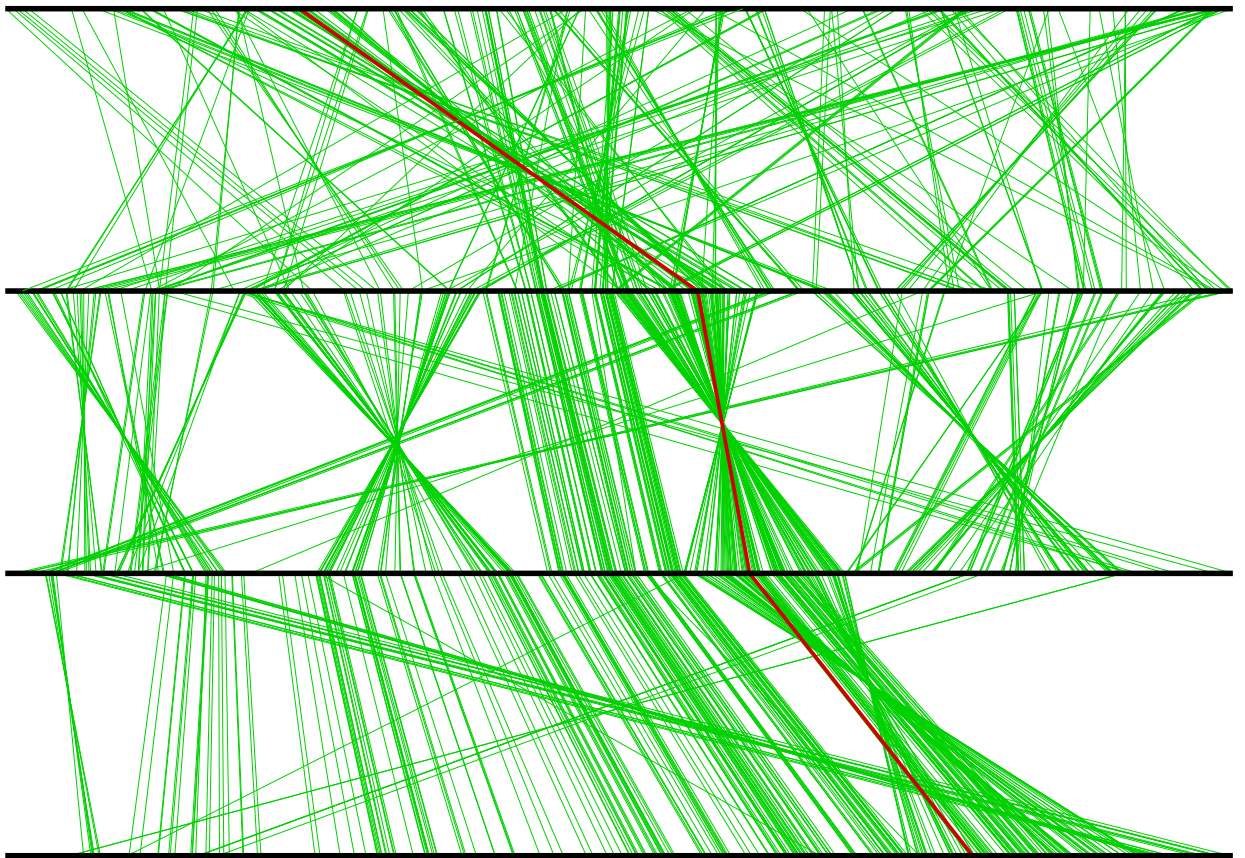
# ephb6a

Dr\_16

OI\_16

Ga\_20

Tn\_8

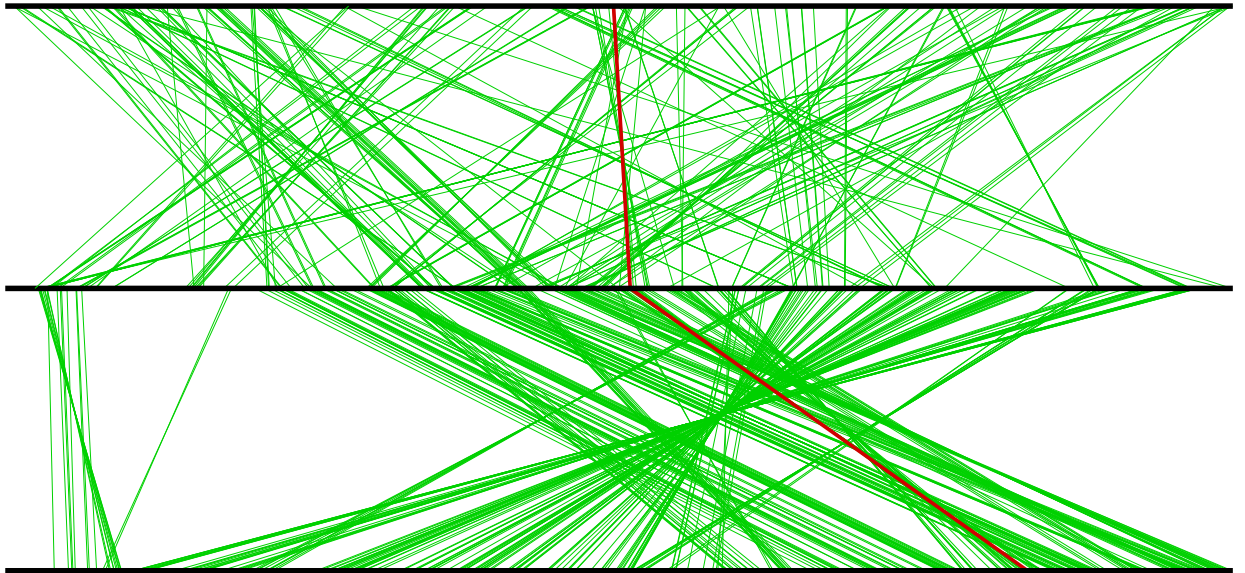


**met**

**Dr\_25**

**Ga\_19**

**Tn\_13**



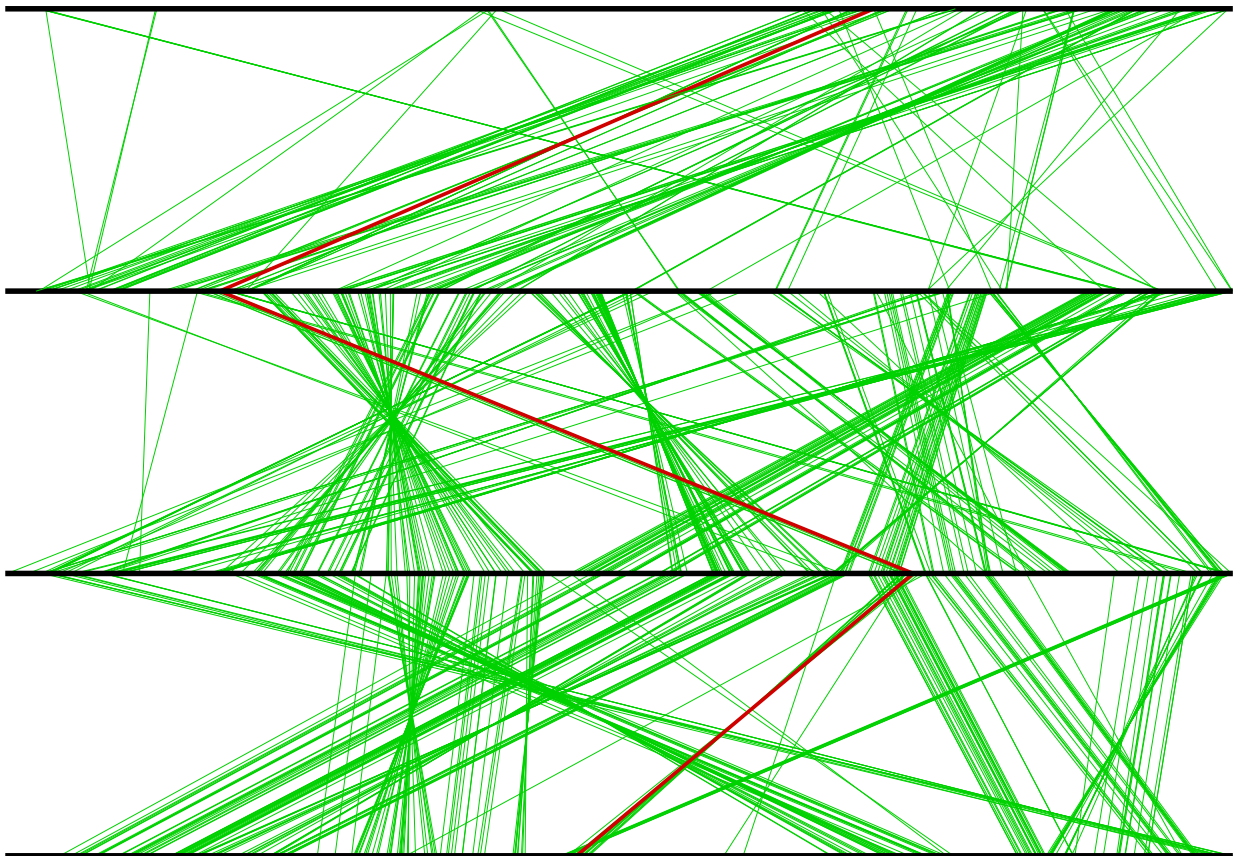
# mst1ra

Dr\_6

OI\_5

Ga\_17

Tn\_11



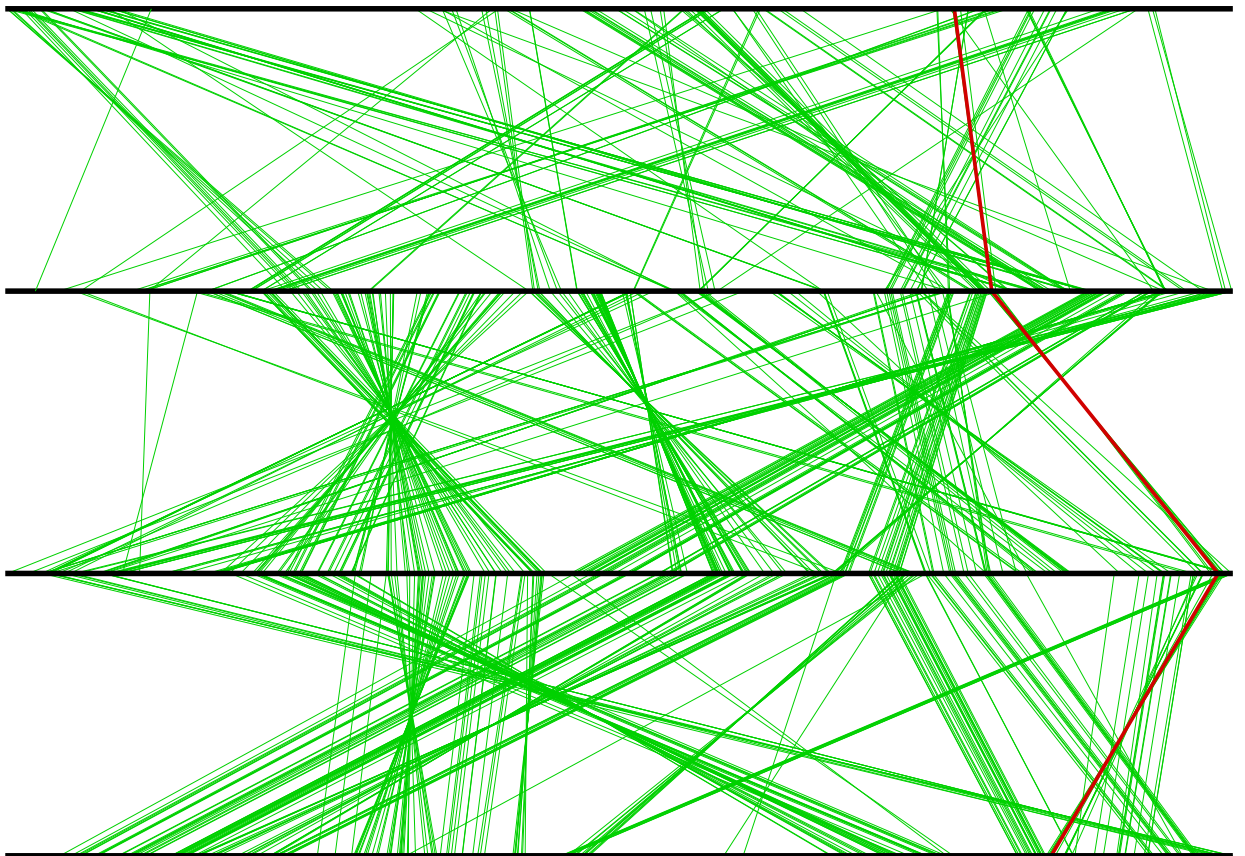
# mst1rb

Dr\_11

OI\_5

Ga\_17

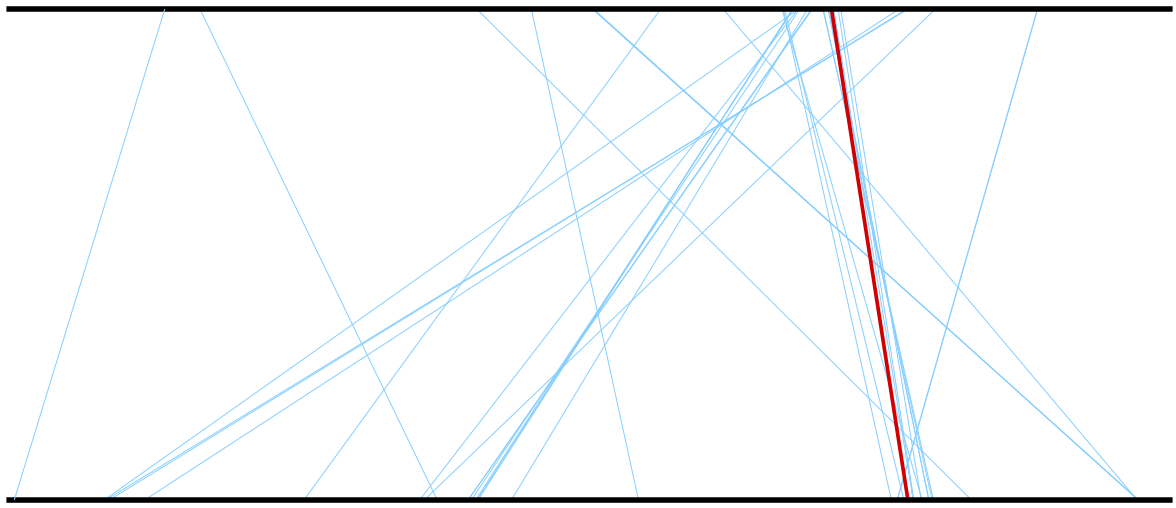
Tn\_11



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**Dr\_6**

**Dr\_11**



**mst1rb ENSDARG00000004871 Dr\_11 36057226**



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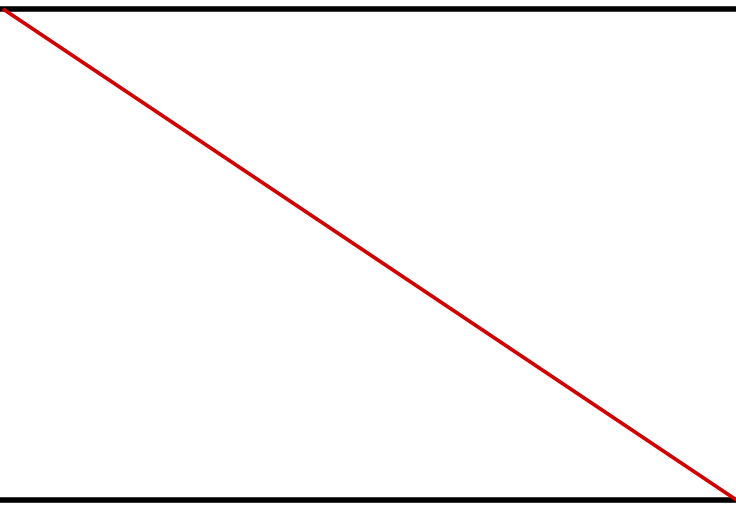
**OI\_5**



**OI\_5**



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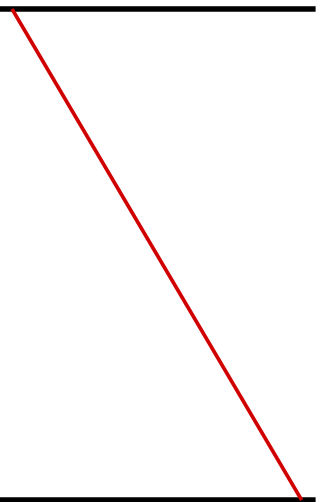
**Ga\_17**



**Ga\_17**

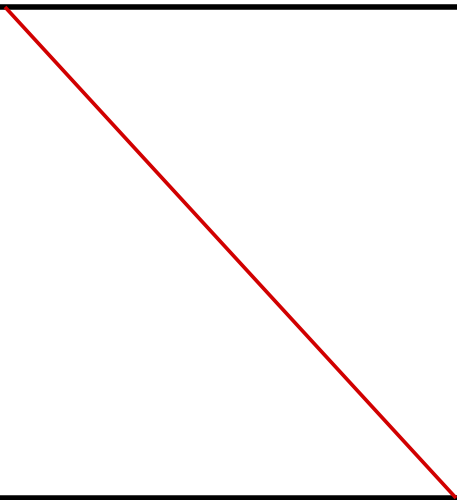


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**Tn\_11**



**Tn\_11**



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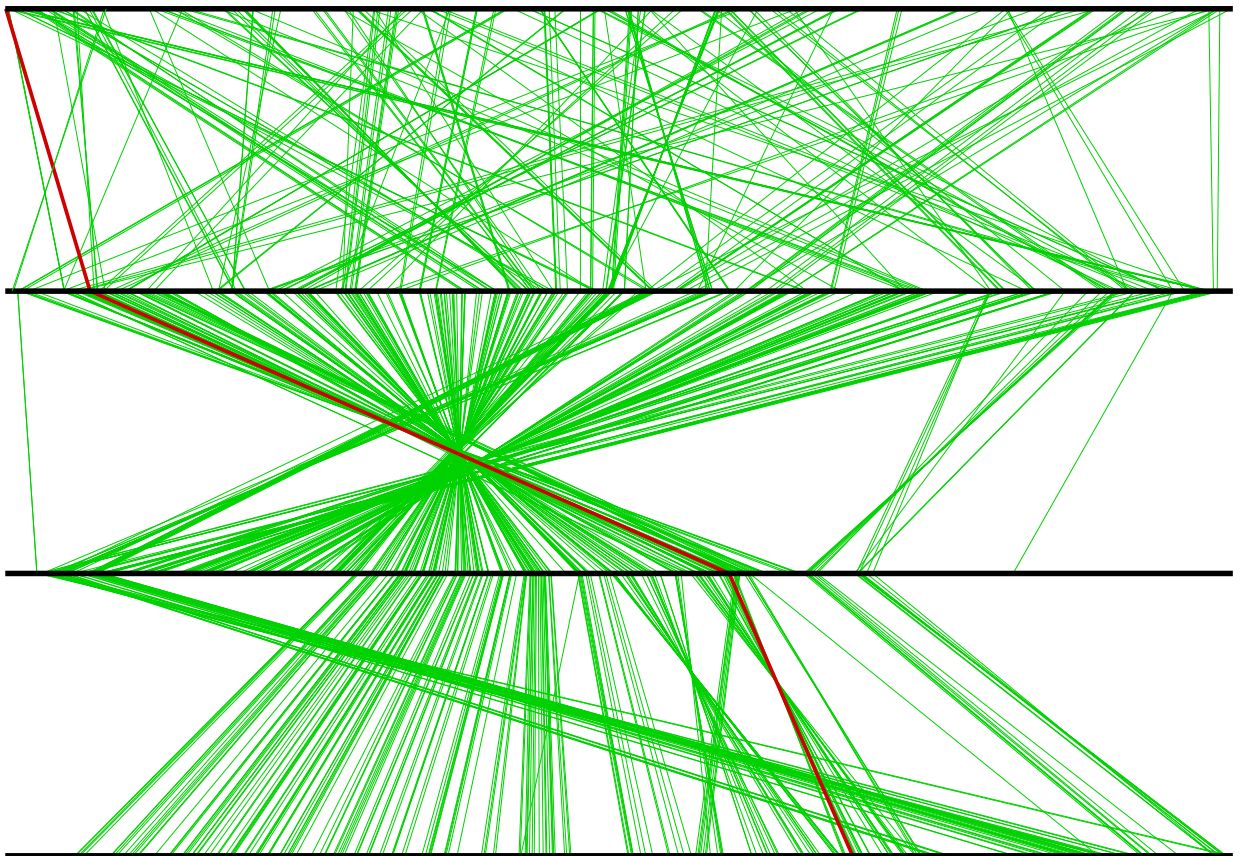
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Dr\_15

OI\_13

Ga\_1

Tn\_16



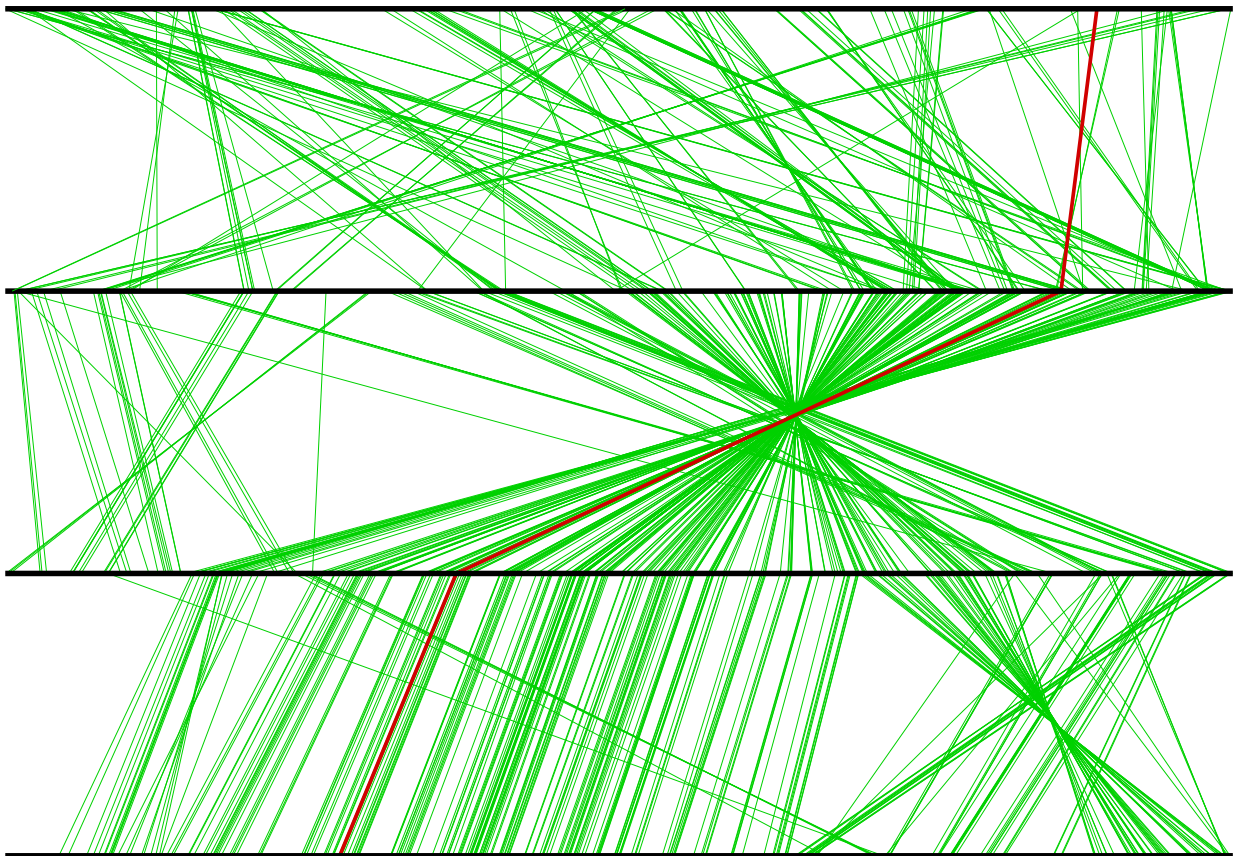
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Dr\_13

OI\_15

Ga\_6

Tn\_17

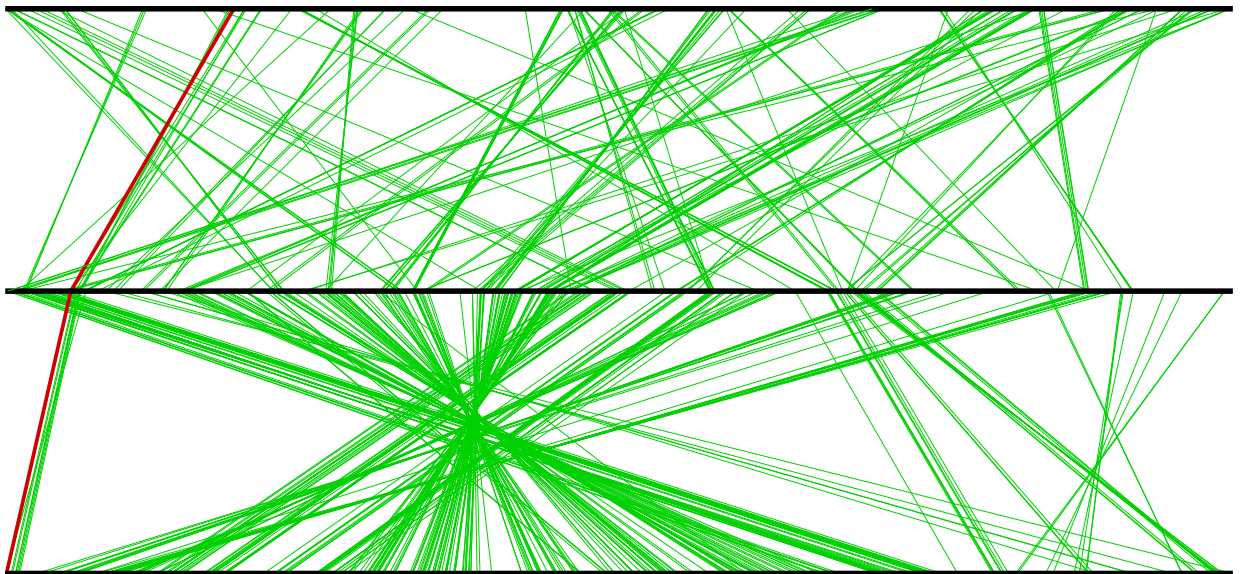


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Dr\_17

OI\_22

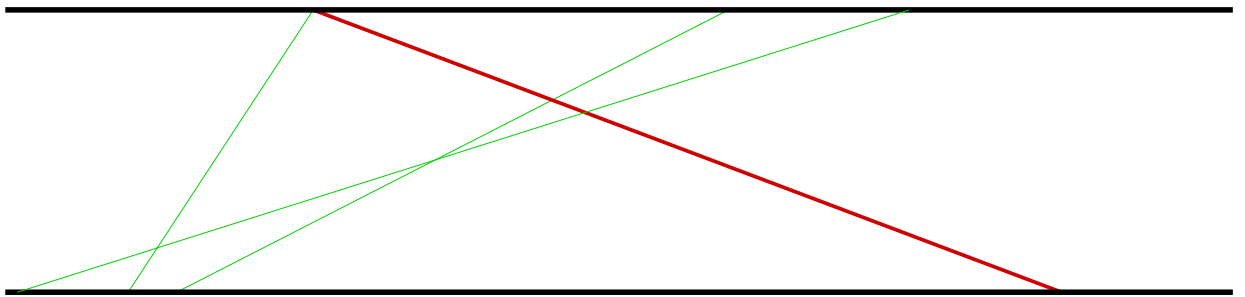
Ga\_15



# tyro3l

Dr\_7

OI\_15

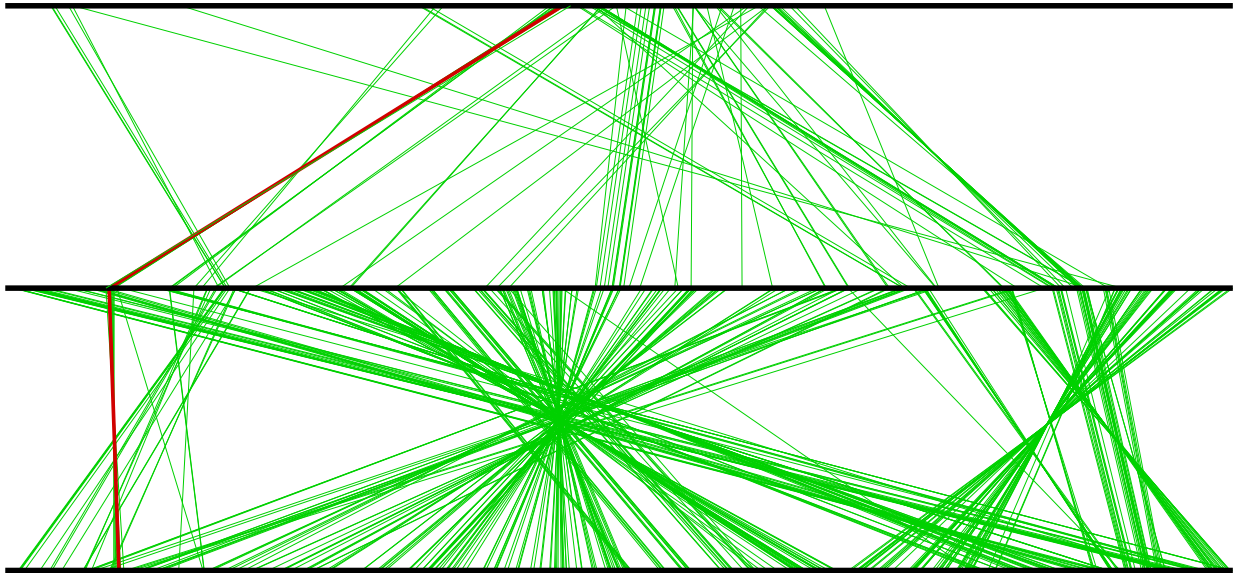


**ryk**

**Dr\_6**

**OI\_4**

**Ga\_8**





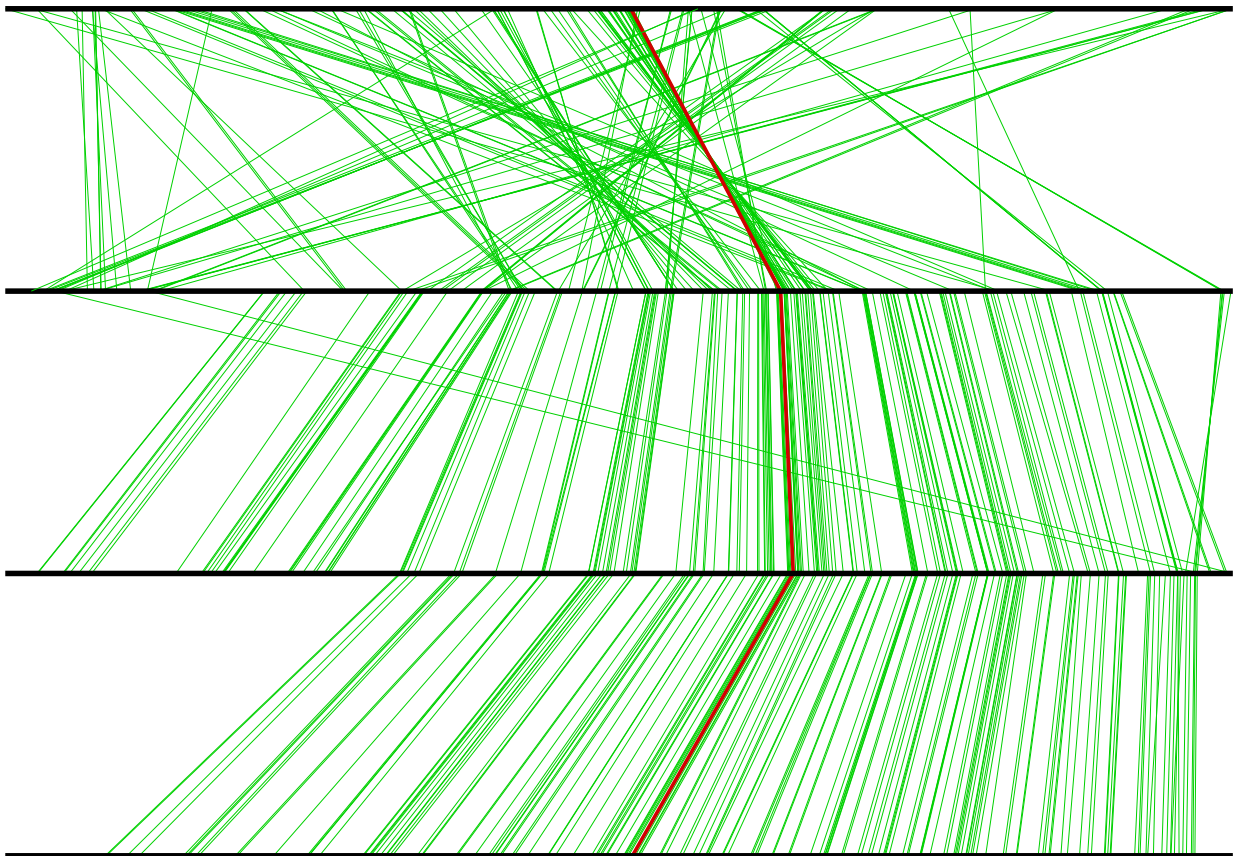
# flt1

Dr\_24

OI\_20

Ga\_21

Tn\_6



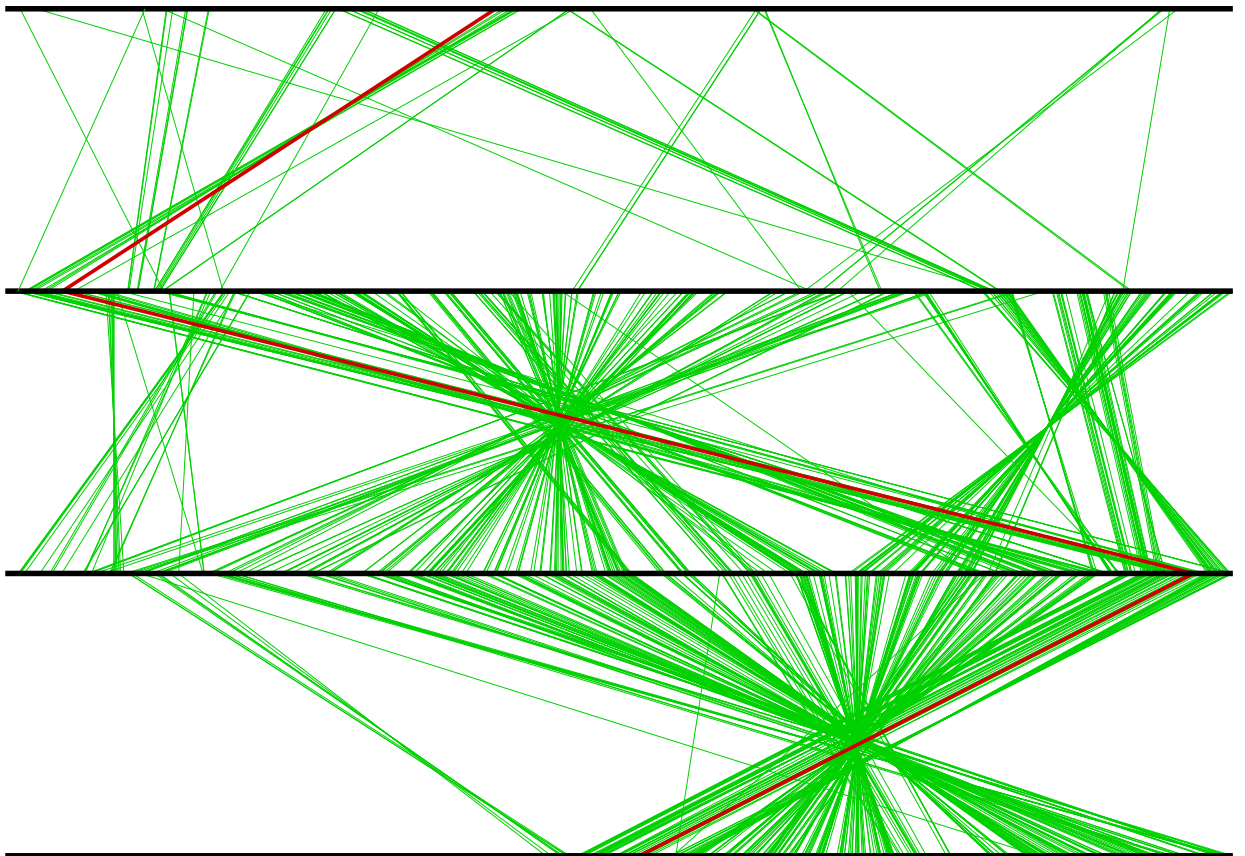
# kdr

Dr\_20

OI\_4

Ga\_8

Tn\_1



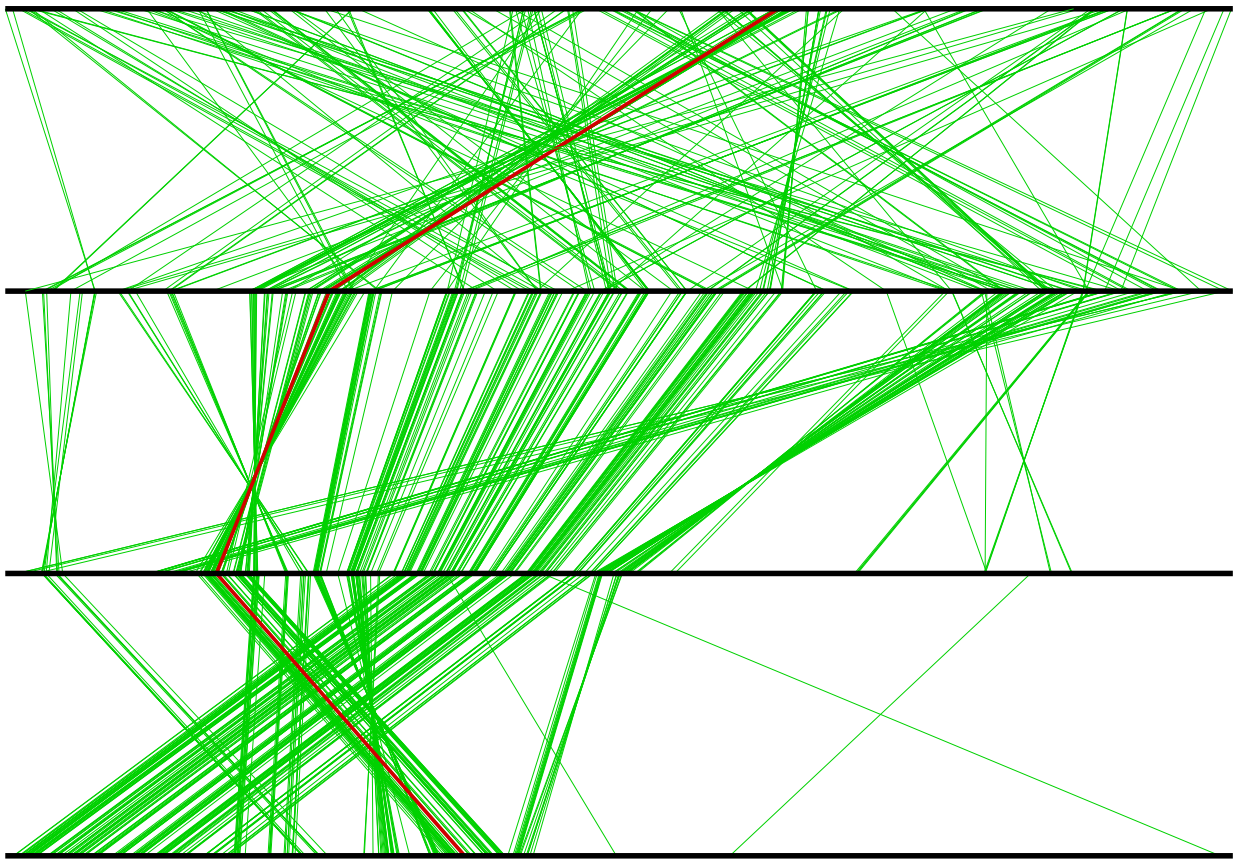
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Dr\_14

OI\_10

Ga\_4

Tn\_1



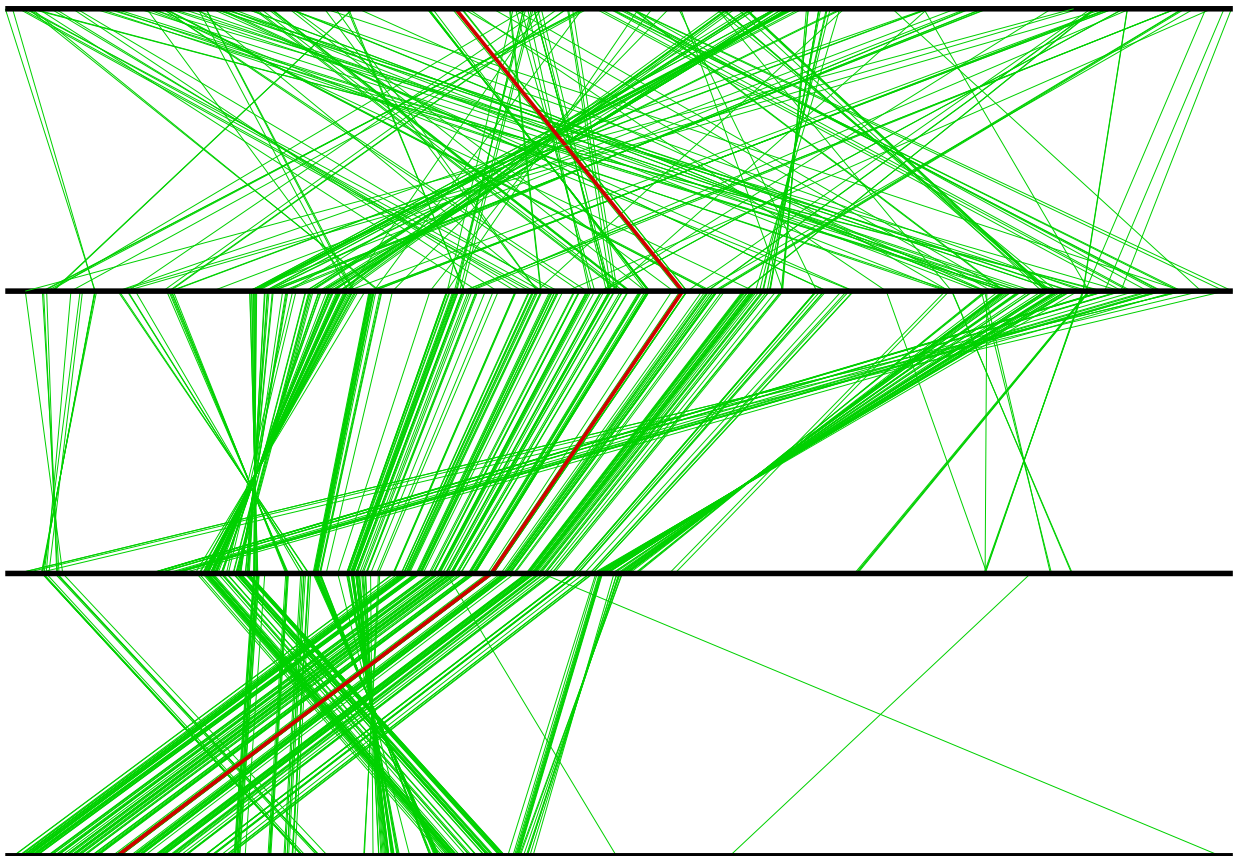
# flt4

Dr\_14

OI\_10

Ga\_4

Tn\_1



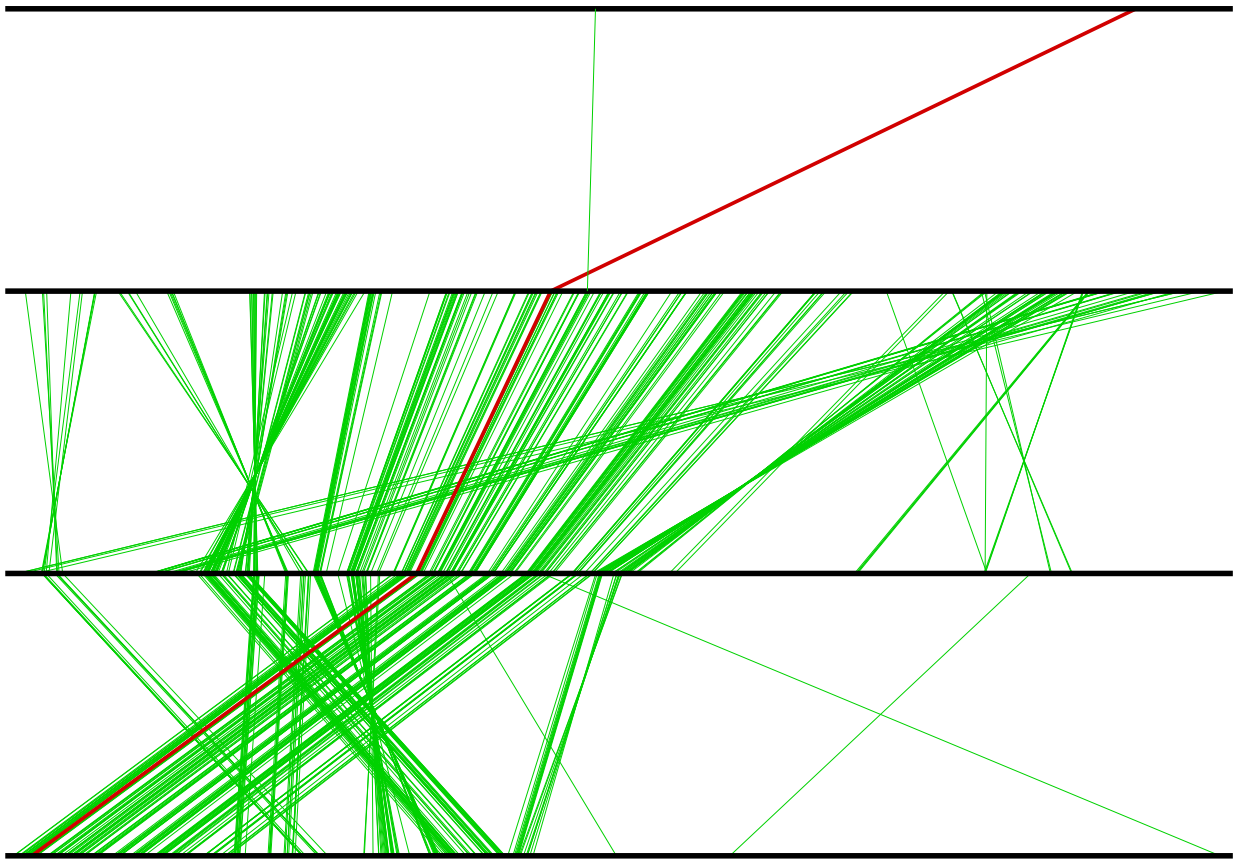
# csf1ra

Dr\_15

OI\_10

Ga\_4

Tn\_1



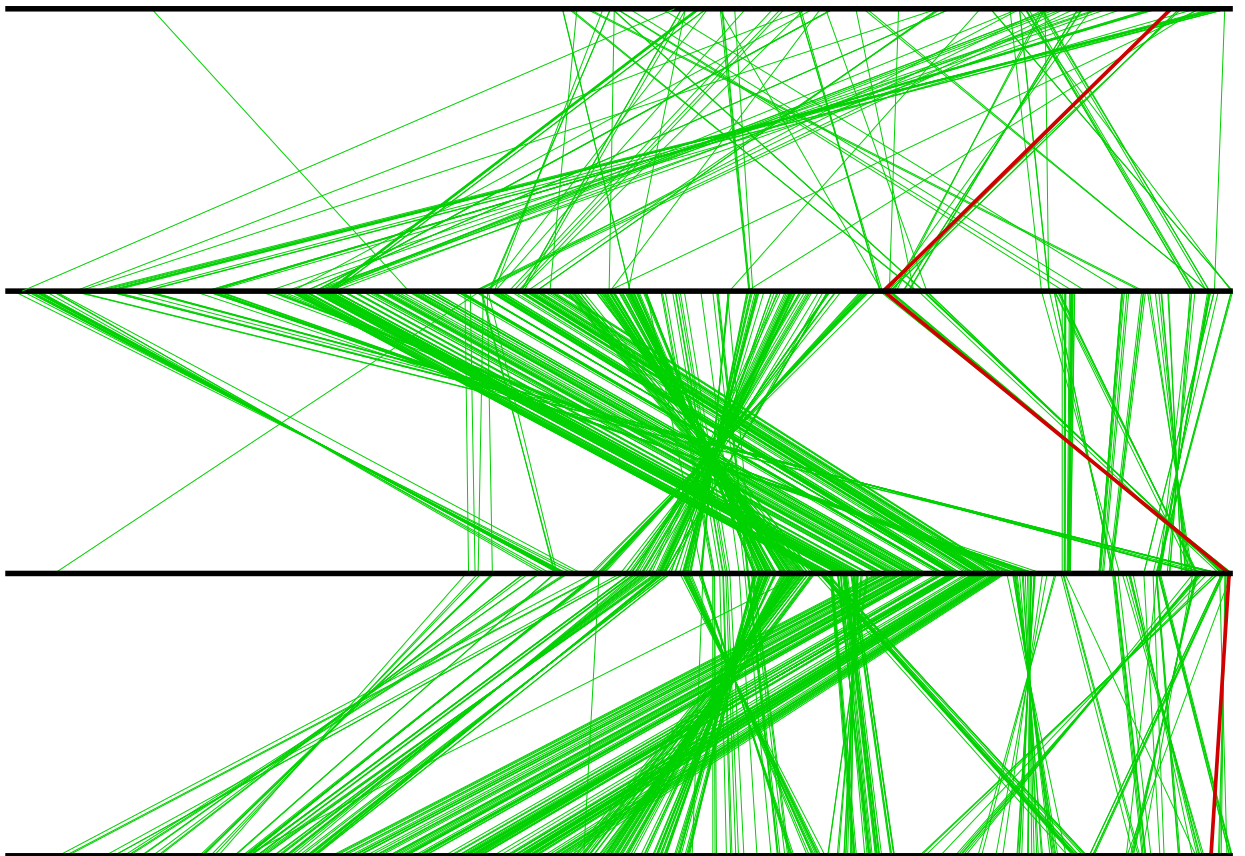
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Dr\_21

OI\_14

Ga\_7

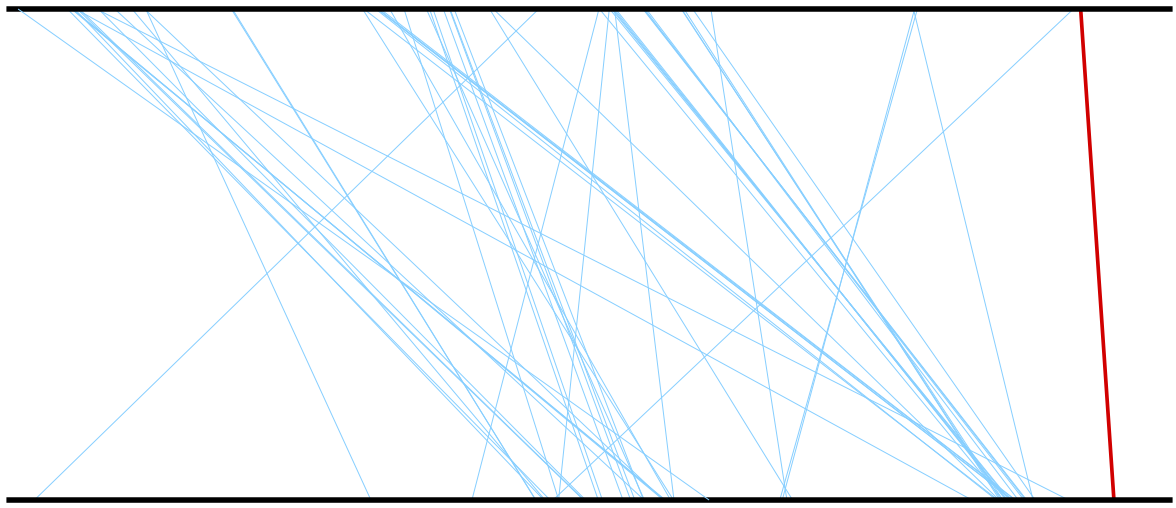
Tn\_7



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**Dr\_15**

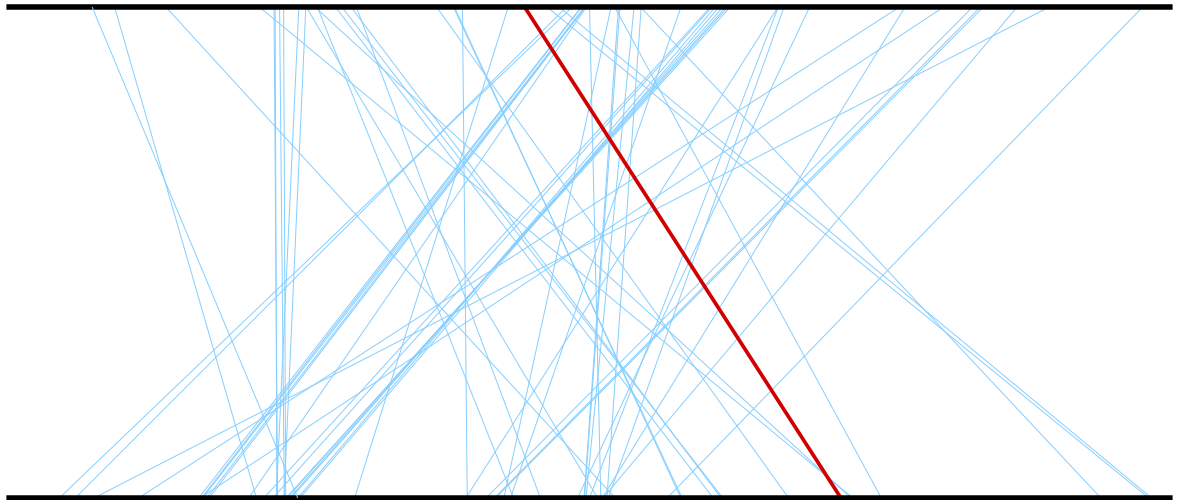
**Dr\_21**



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**OI\_10**



**OI\_14**

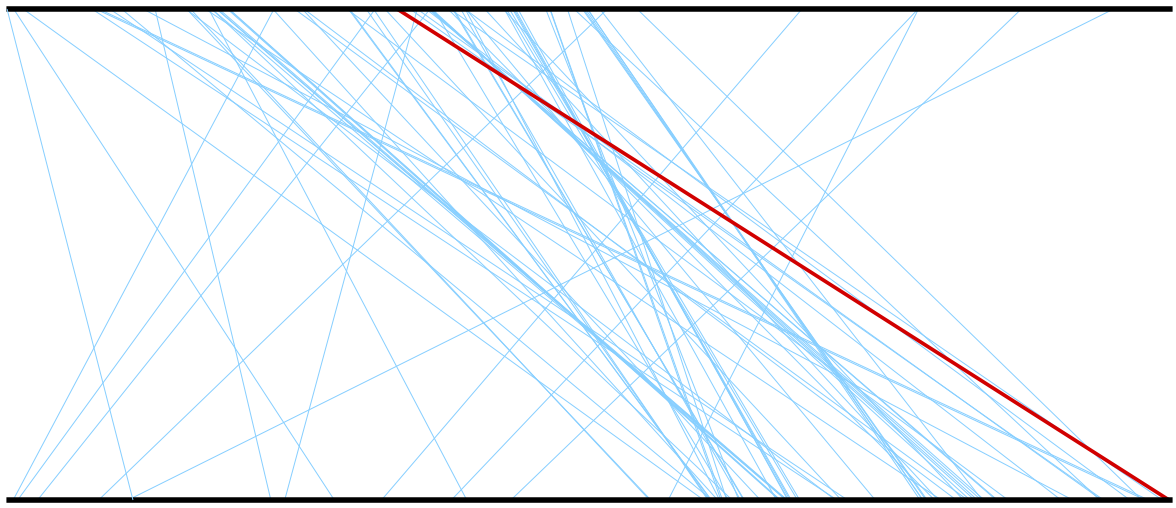
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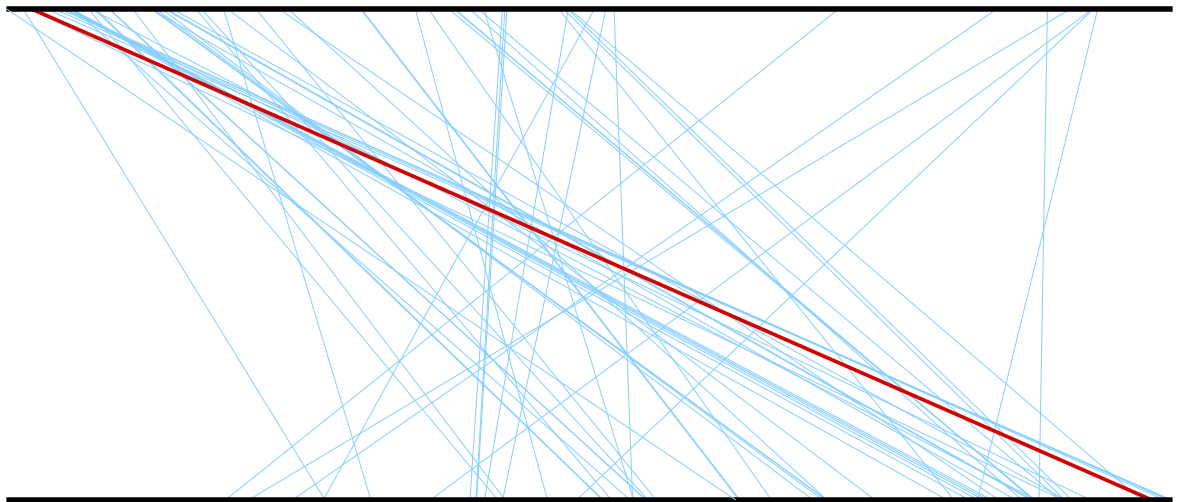
**Ga\_7**



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**Tn\_1**



**Tn\_7**

**csf1rb ENSTNIG00000007611 Tn\_7 11478129**

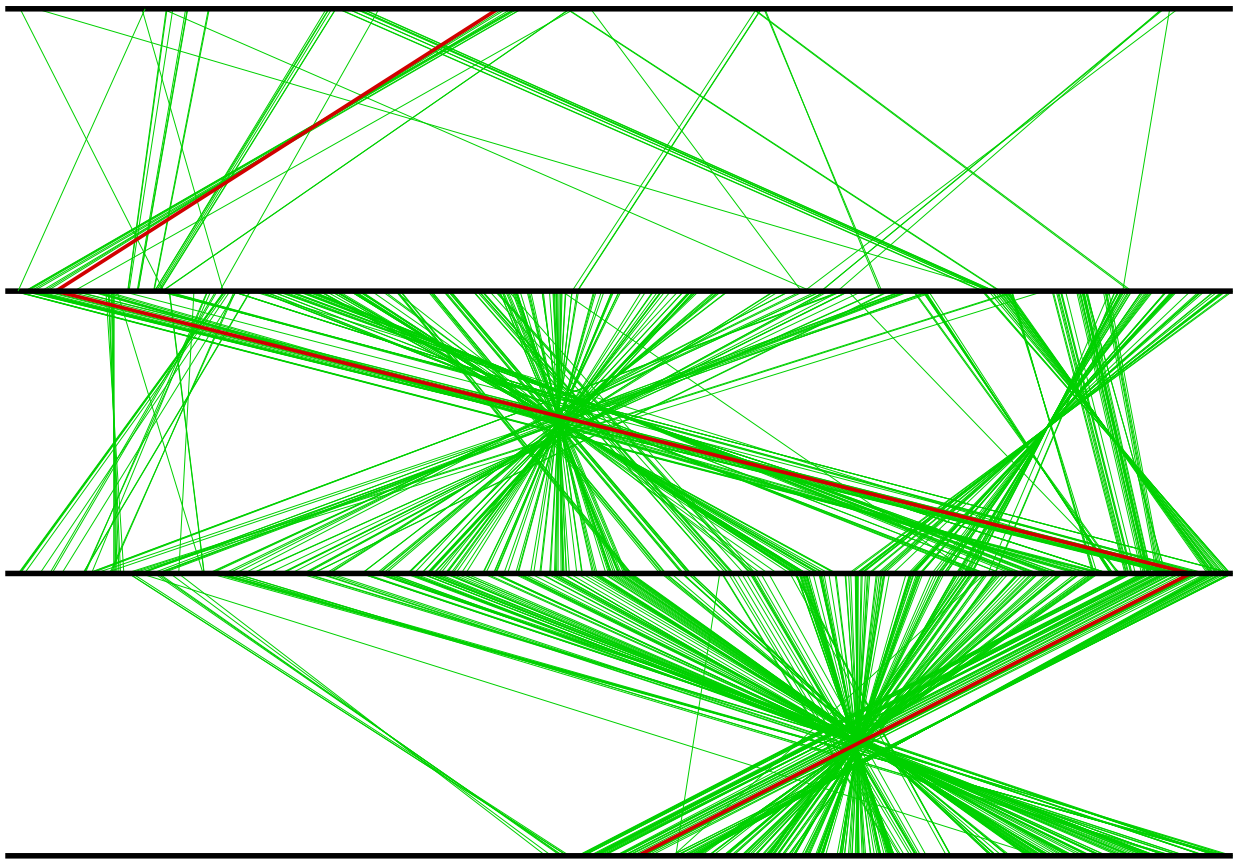
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Dr\_20

OI\_4

Ga\_8

Tn\_1



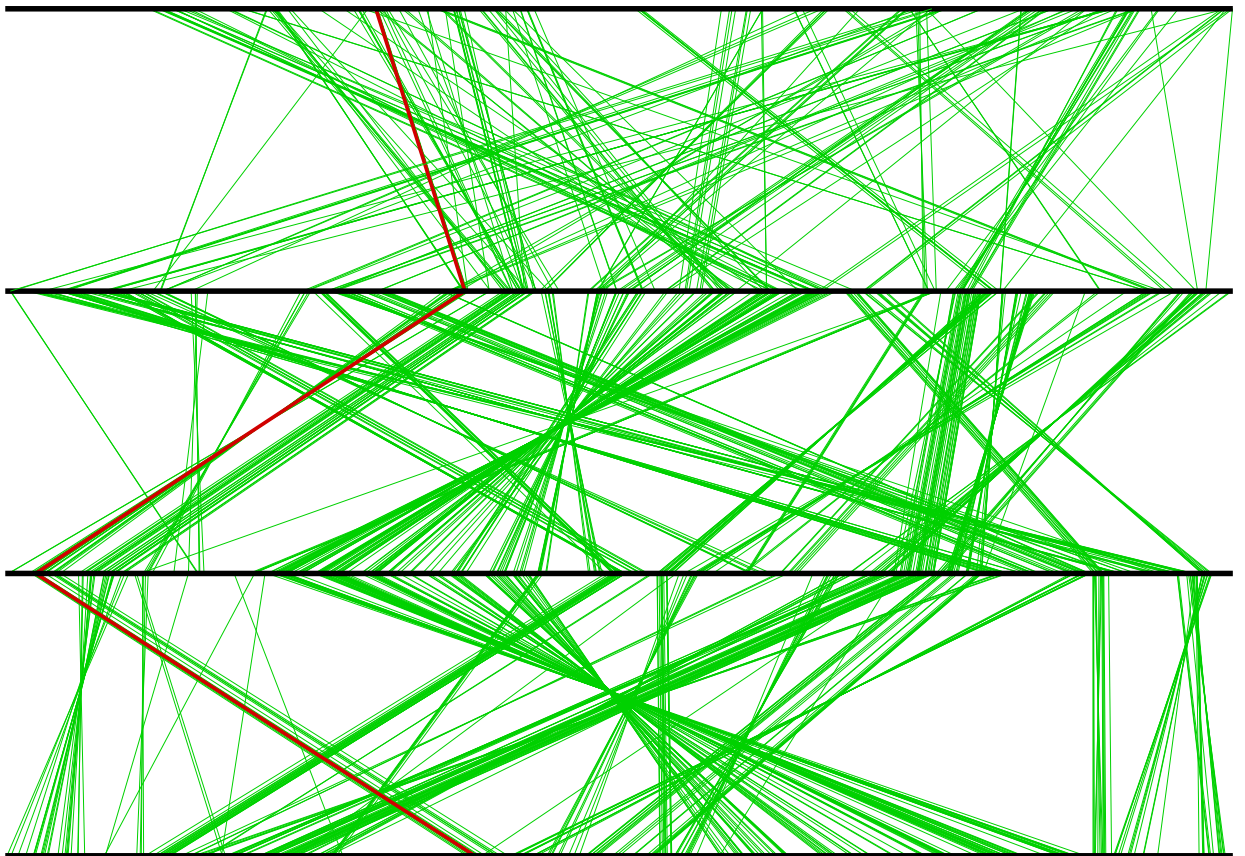
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Dr\_1

OI\_1

Ga\_9

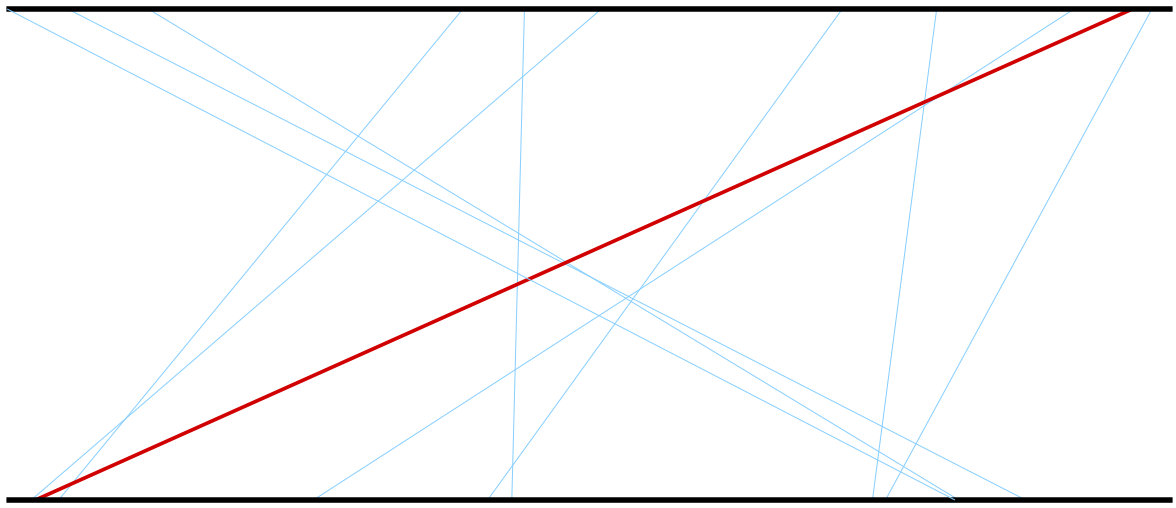
Tn\_18



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**Ga\_8**

**Ga\_9**

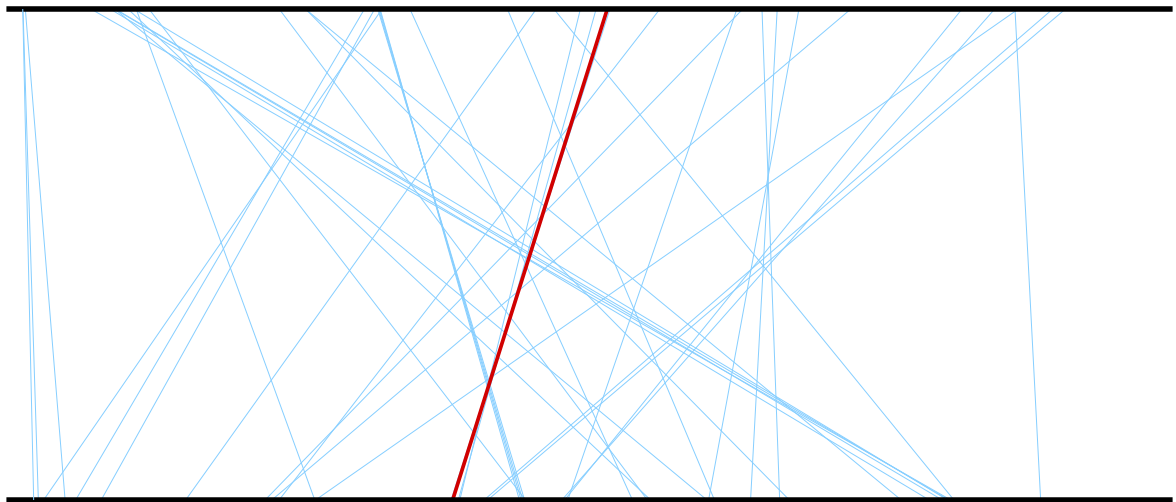


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**Tn\_1**

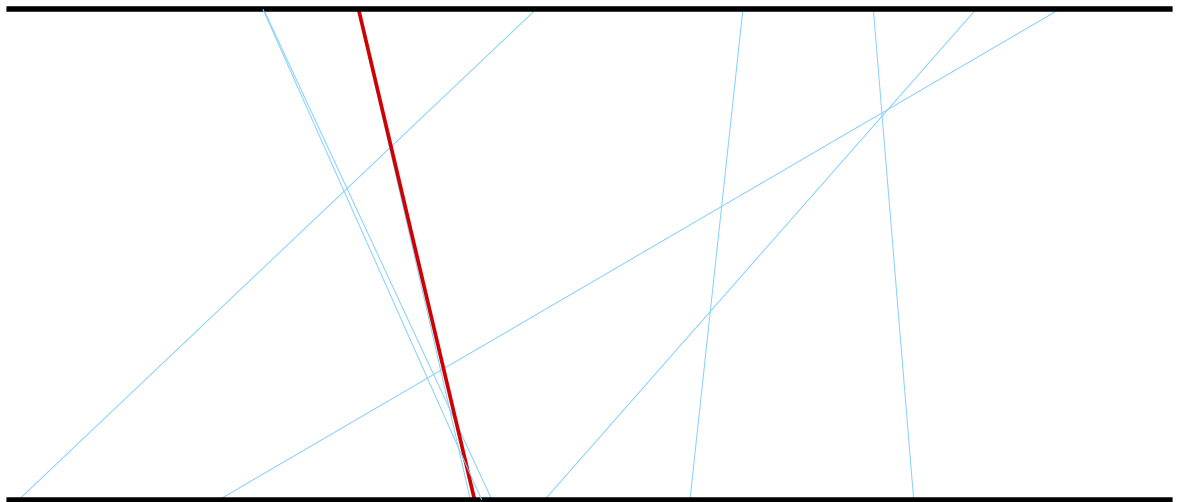
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**kitb ENSDARG00000056133 Dr\_1 18214923**

**Dr\_1**

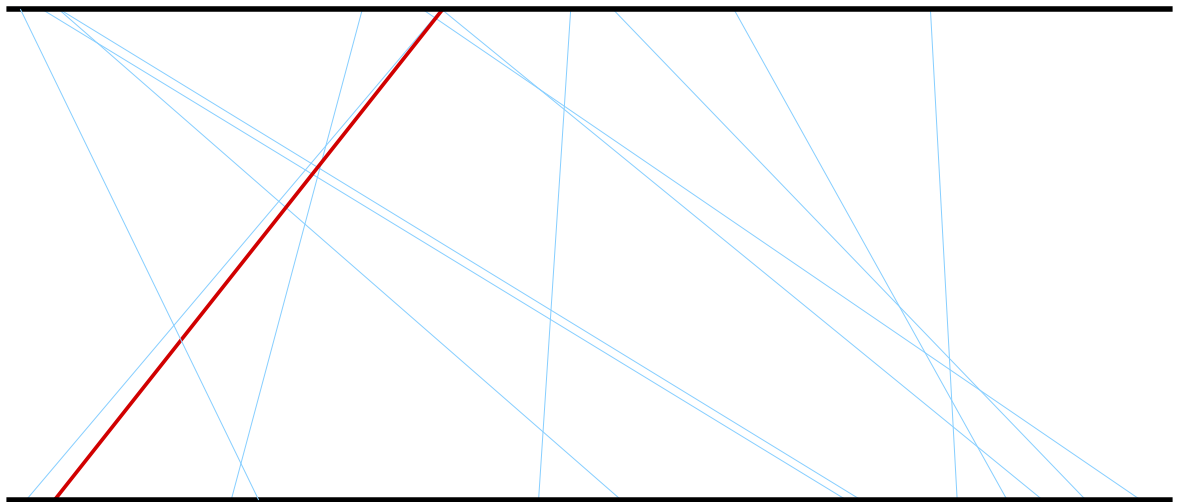


**Dr\_20**

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**OI\_1**



**OI\_4**

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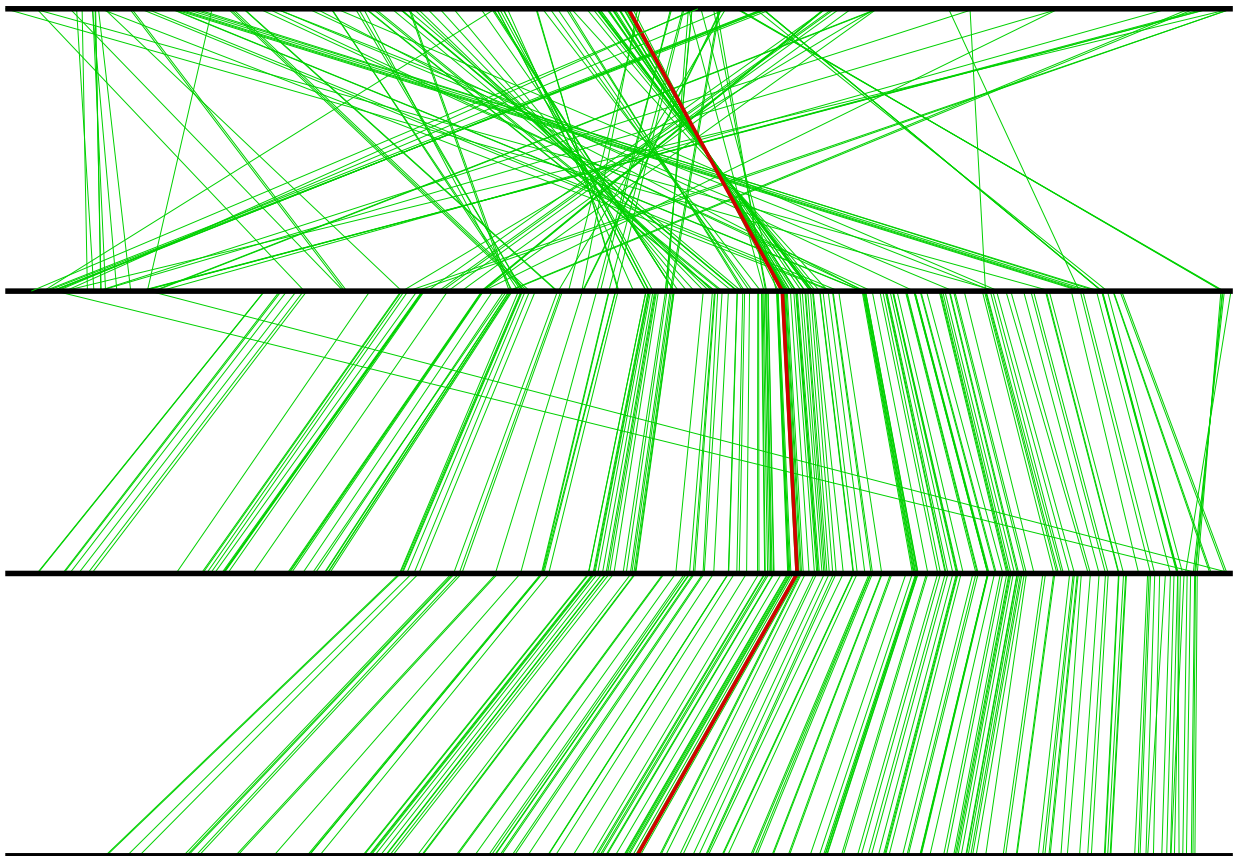
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Dr\_24

OI\_20

Ga\_21

Tn\_6

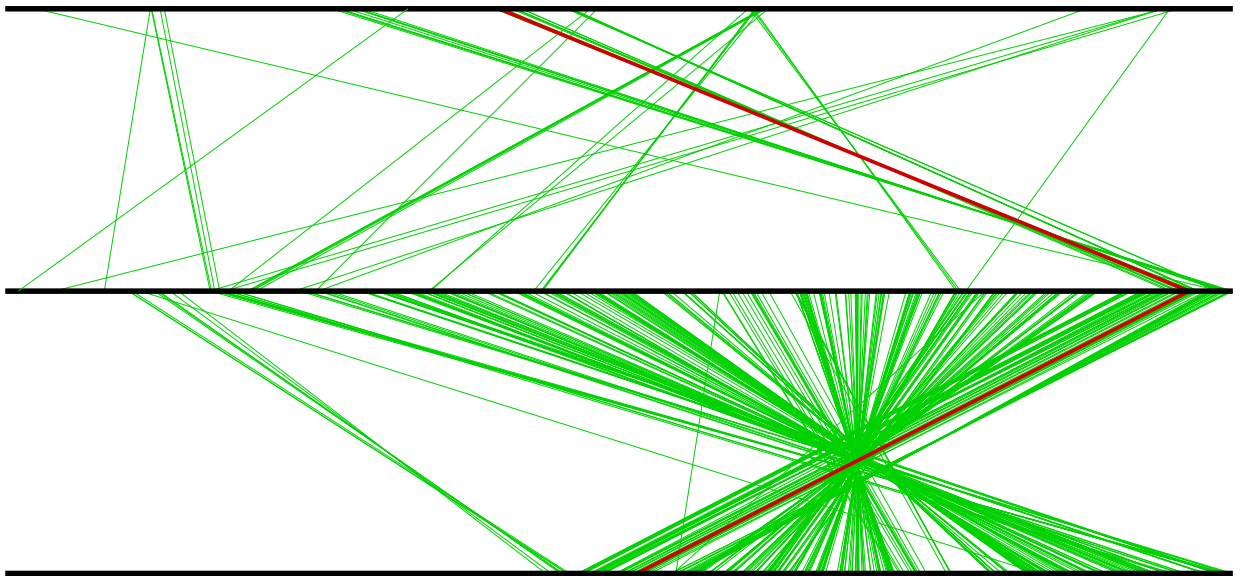


# pdgfra

Dr\_20

Ga\_8

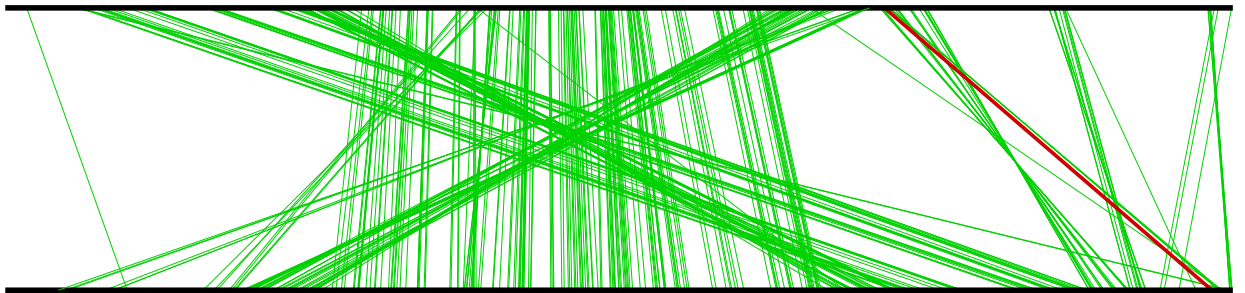
Tn\_1



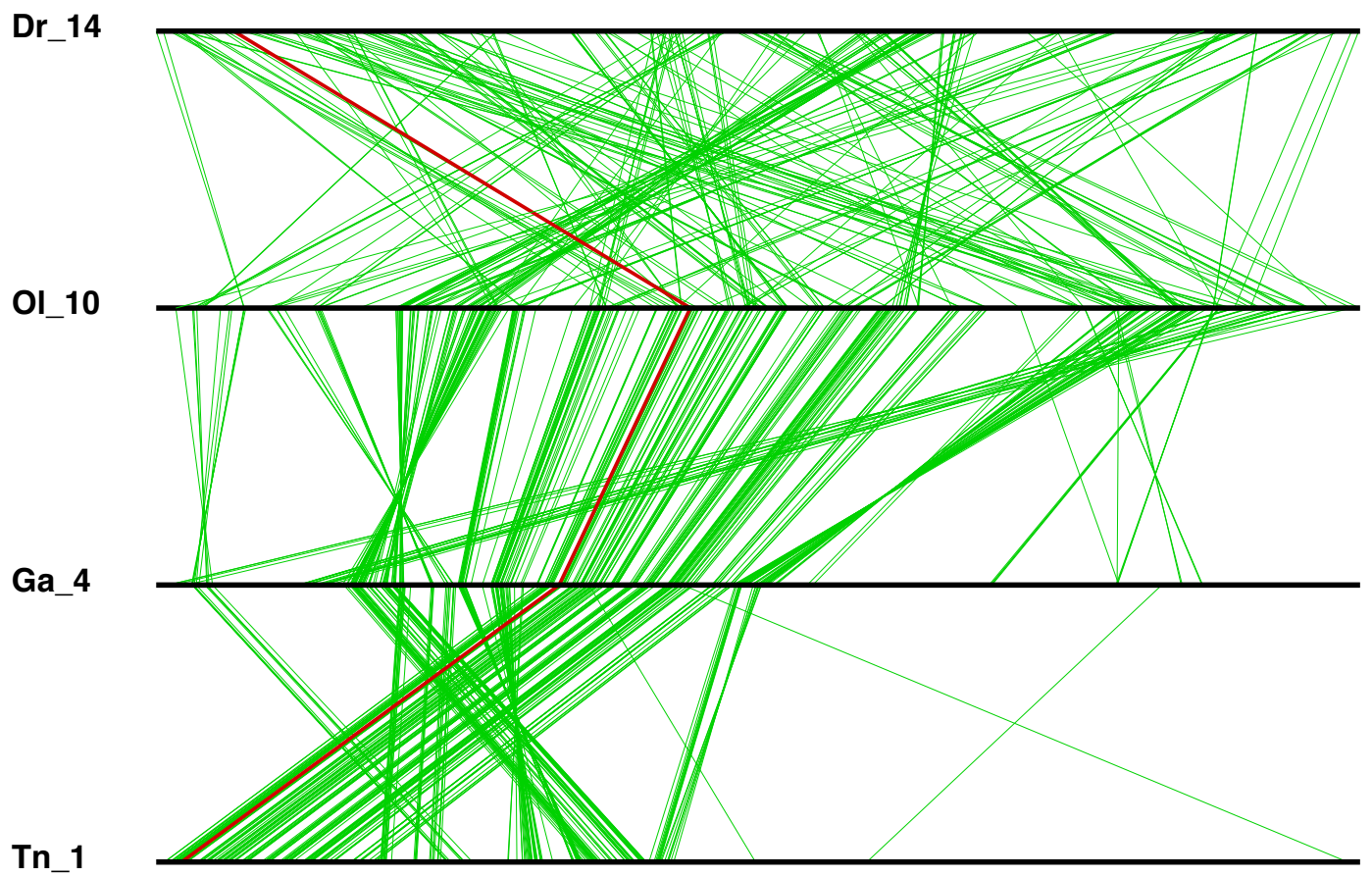
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Ol\_14

Tn\_7

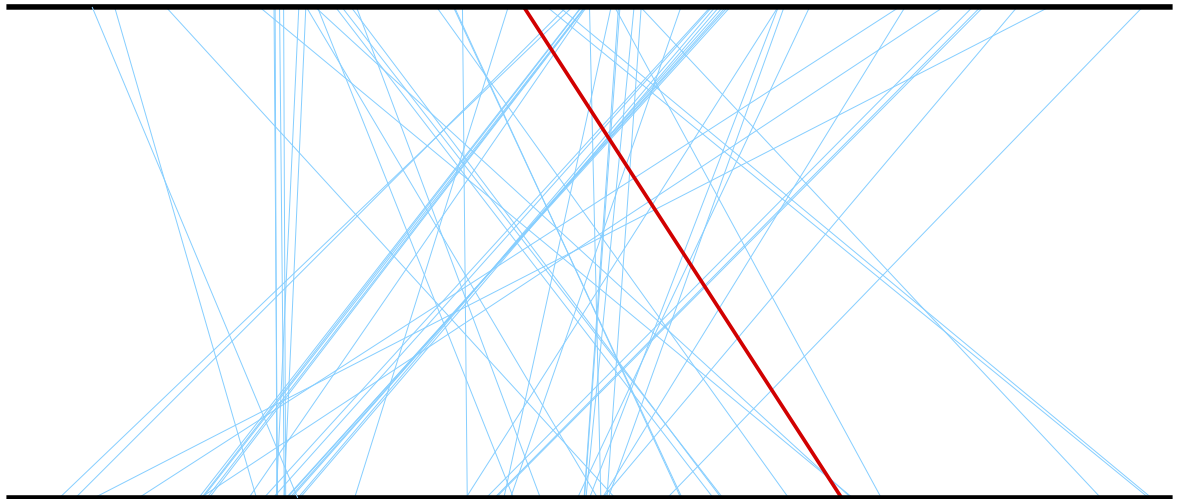


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**OI\_10**



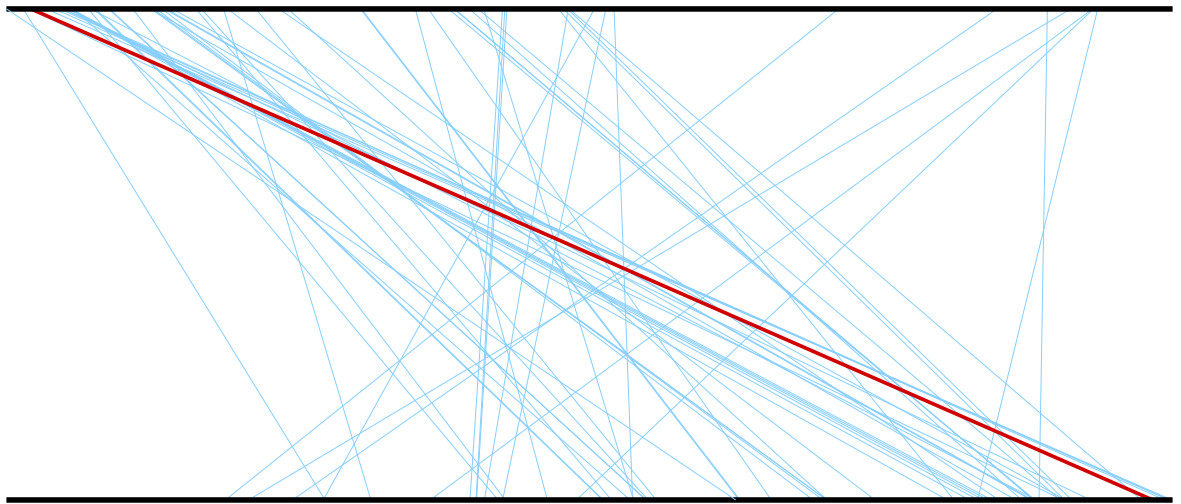
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Tn\_1

Tn\_7



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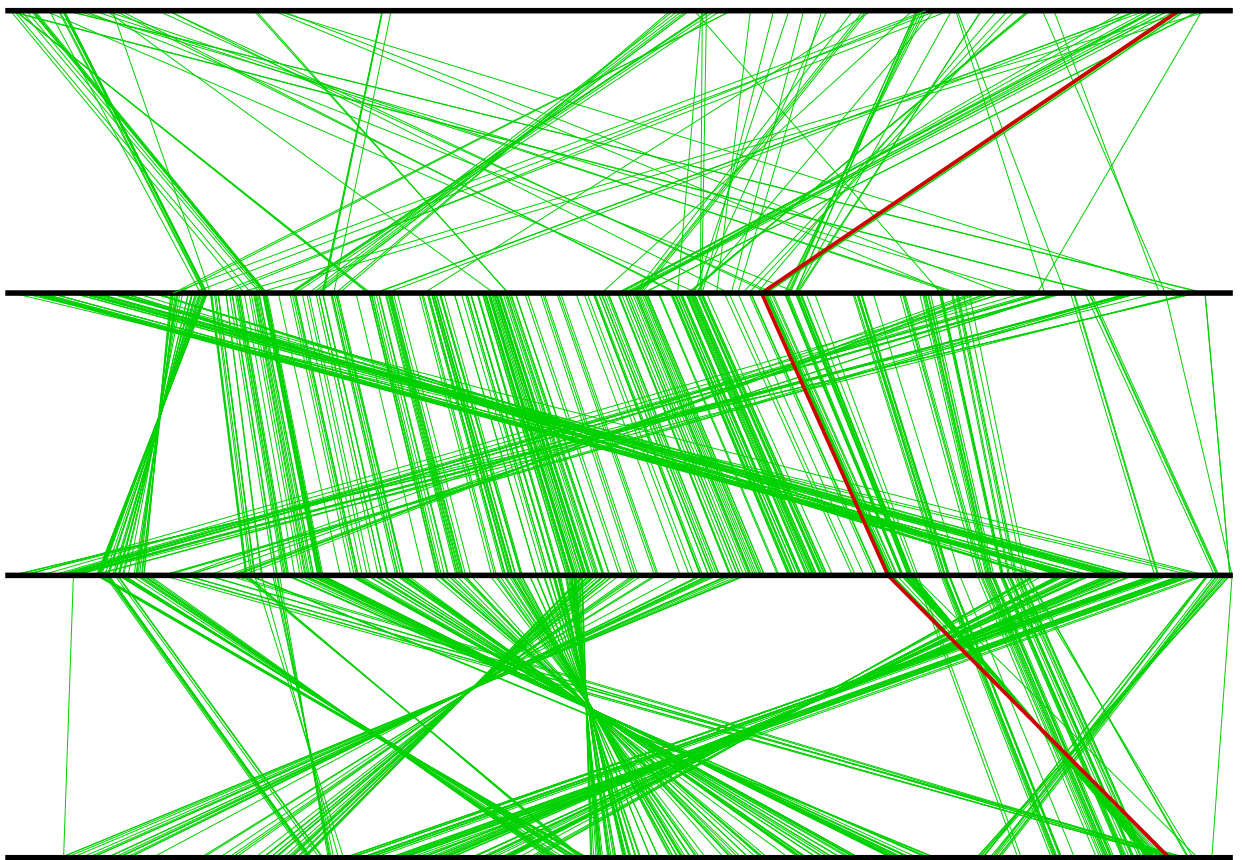
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Dr\_8

OI\_9

Ga\_13

Tn\_12



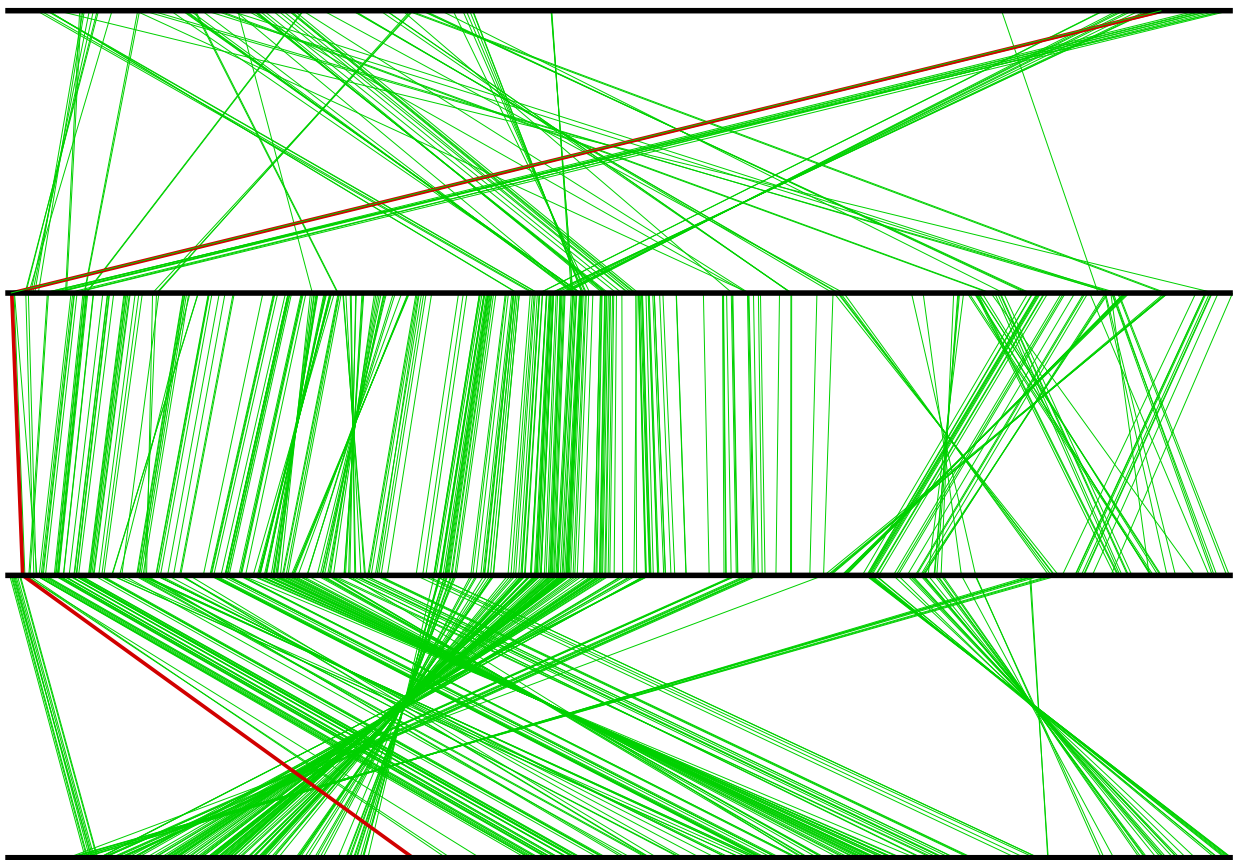
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Dr\_10

OI\_12

Ga\_14

Tn\_4

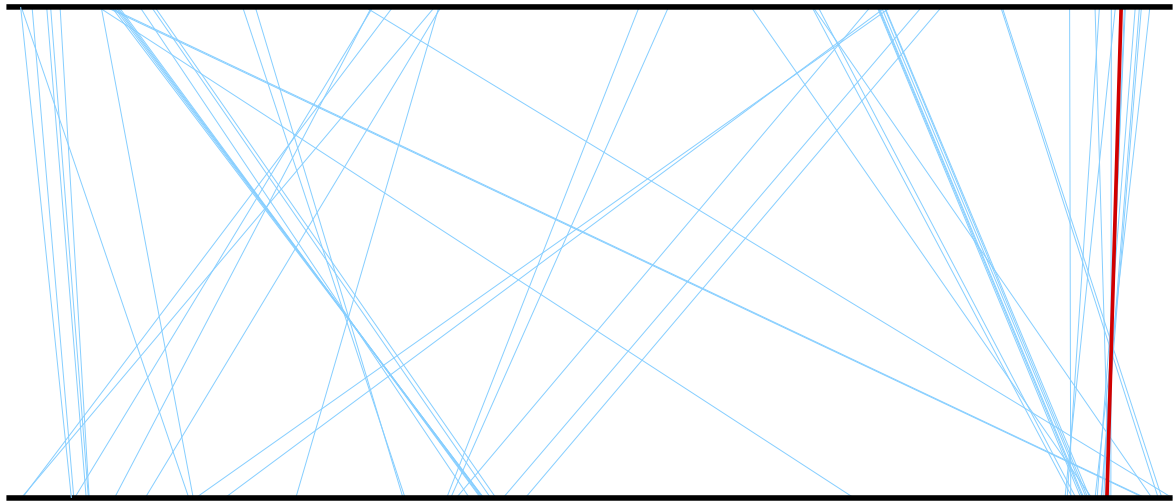




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**Dr\_8**

**Dr\_10**

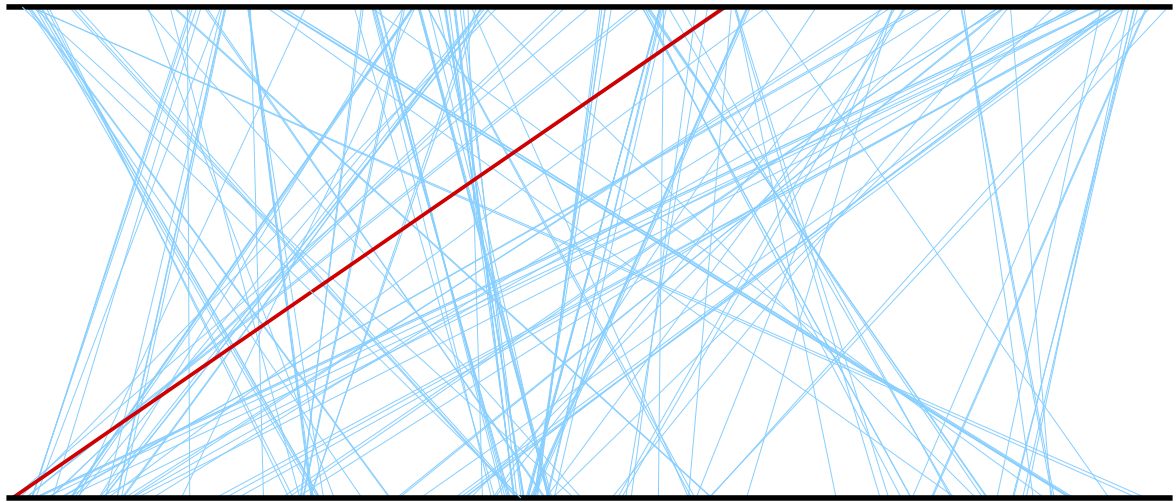


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**OI\_9**

**OI\_12**

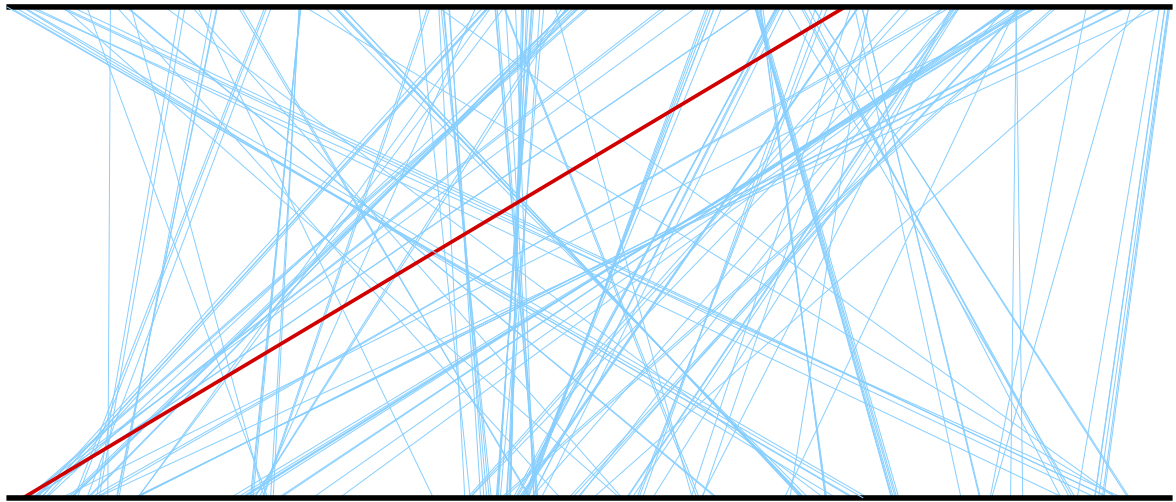


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**Ga\_13**

**Ga\_14**

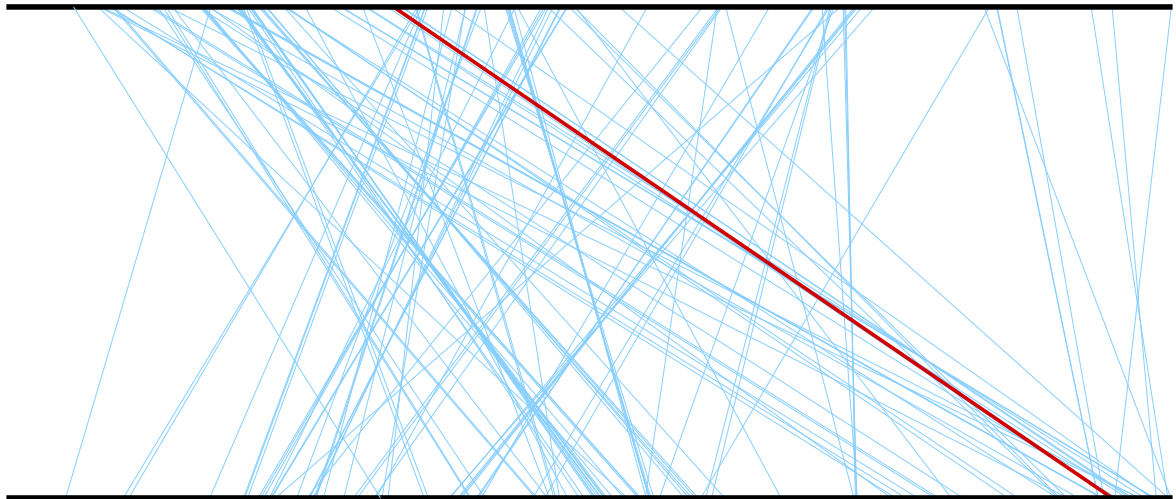


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**Tn\_4**

**Tn\_12**



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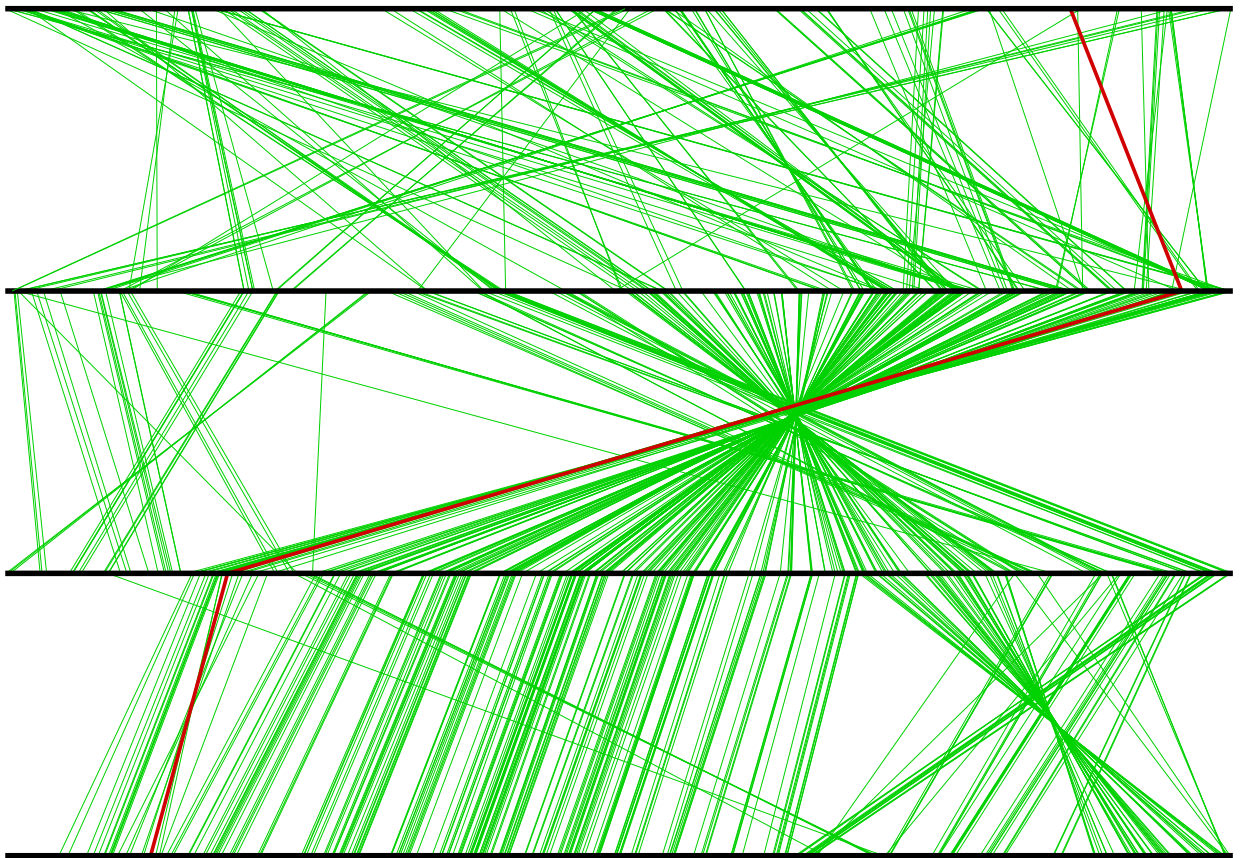
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Dr\_13

OI\_15

Ga\_6

Tn\_17



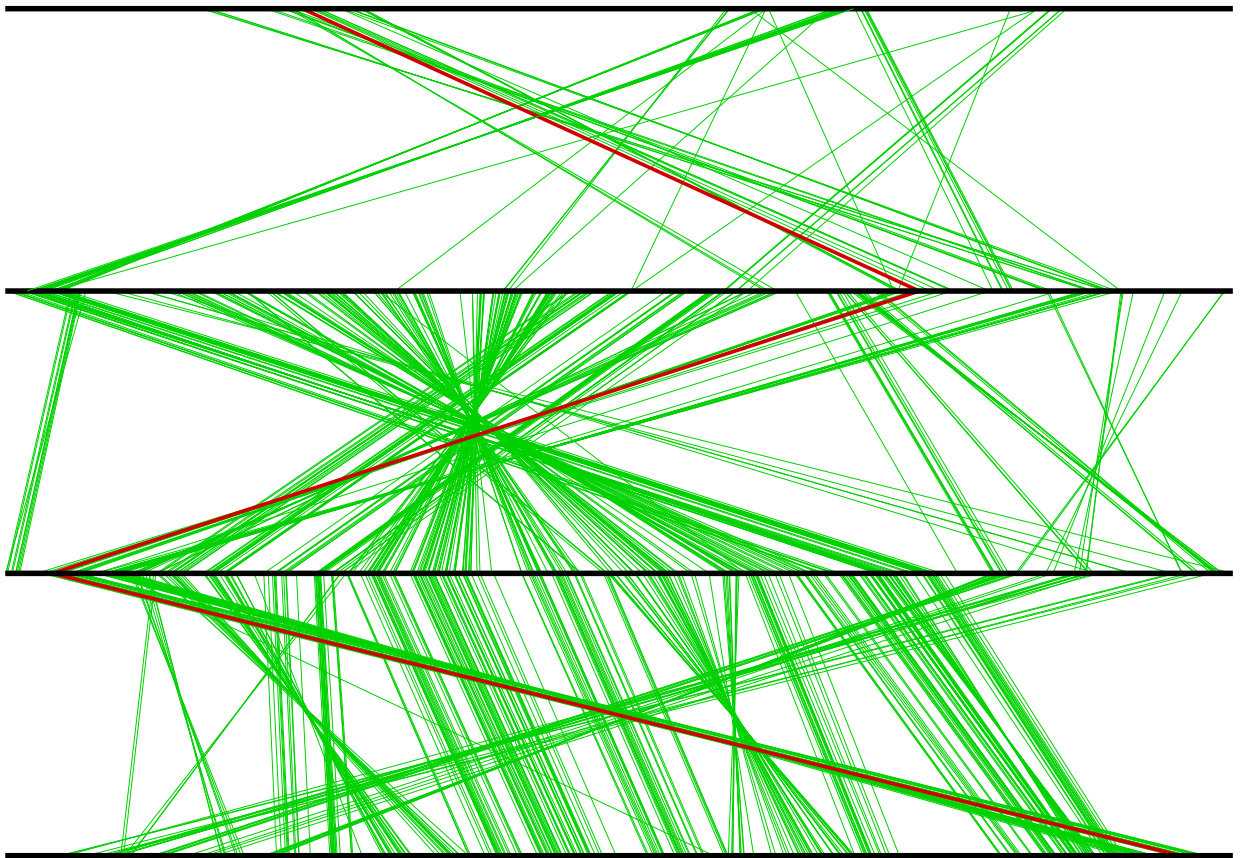
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Dr\_13

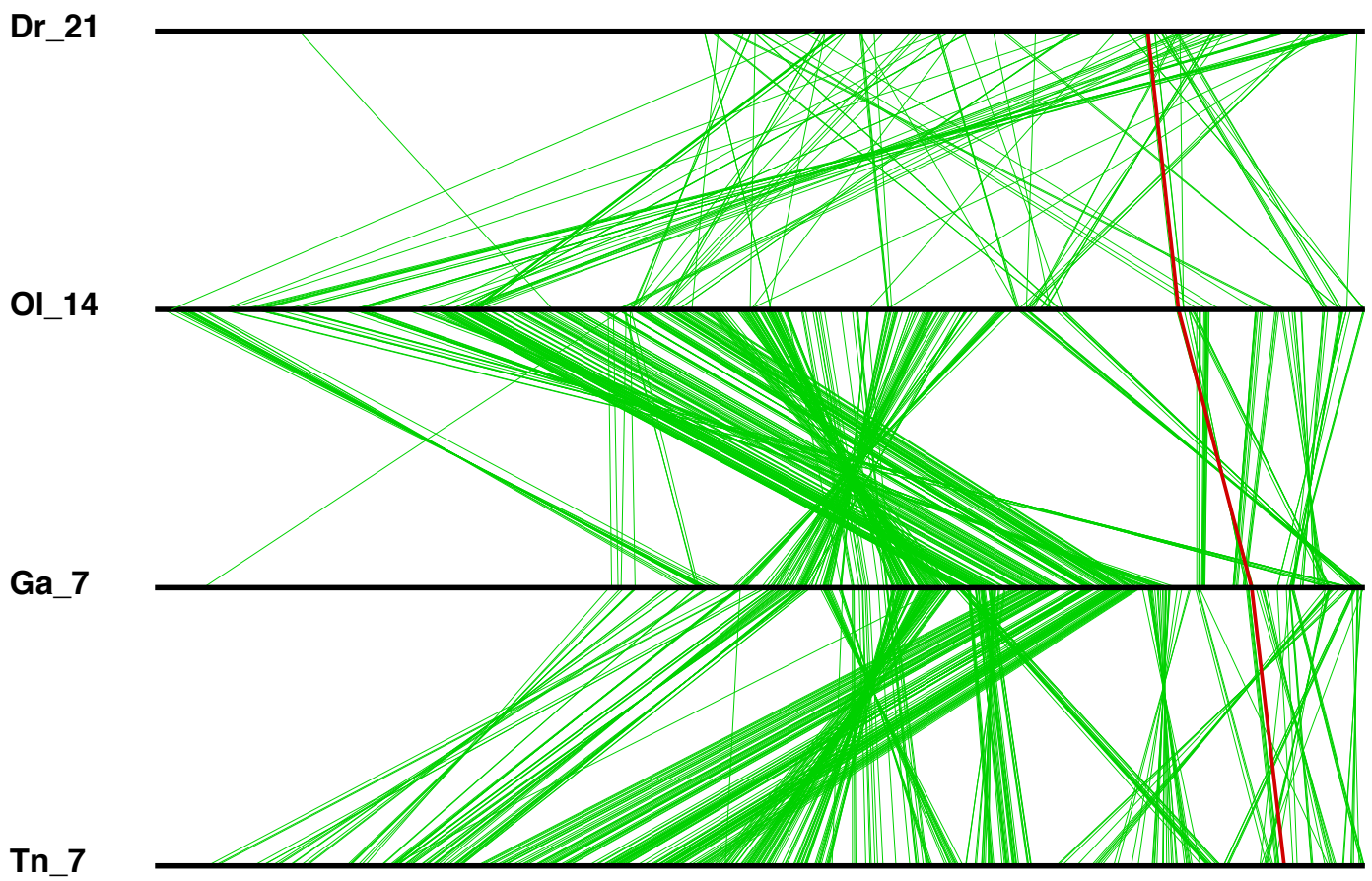
OI\_22

Ga\_15

Tn\_10



# fgfr4



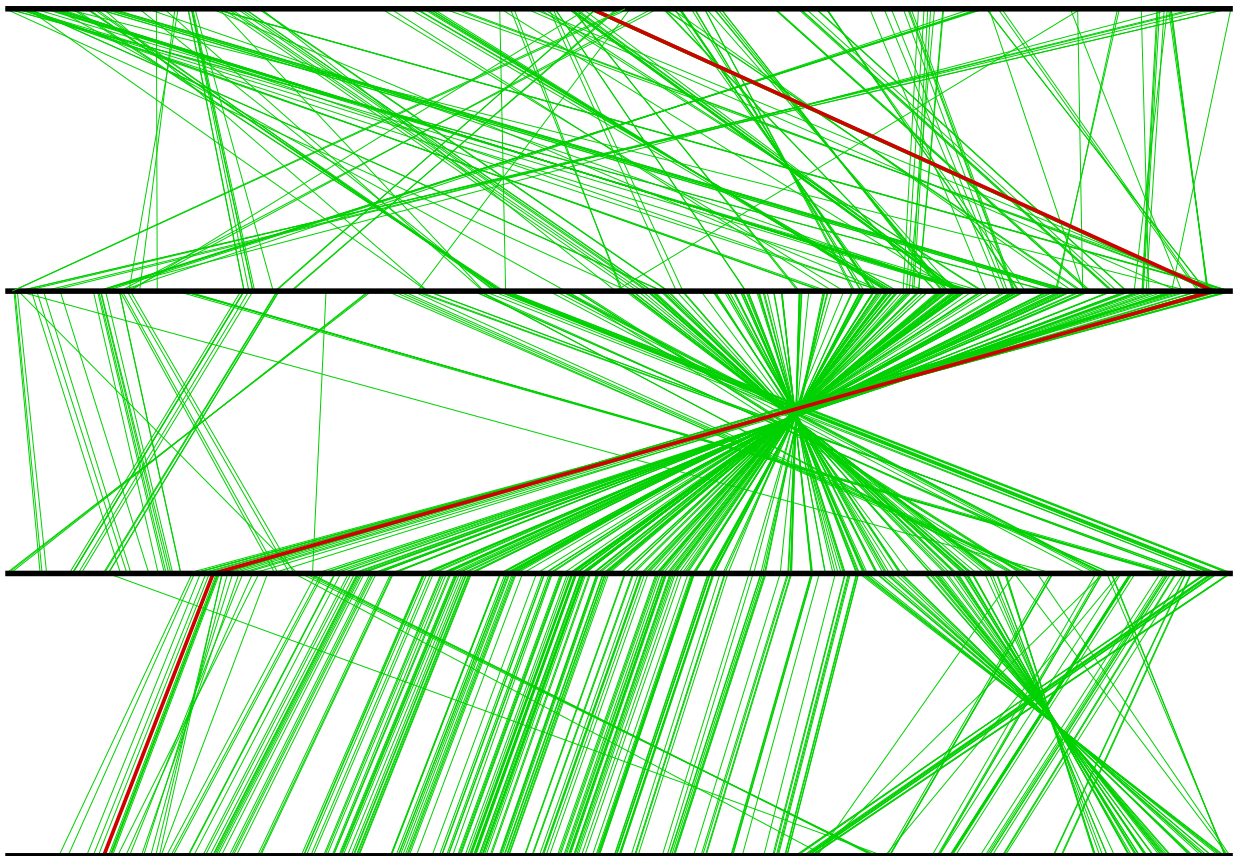
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Dr\_13

OI\_15

Ga\_6

Tn\_17





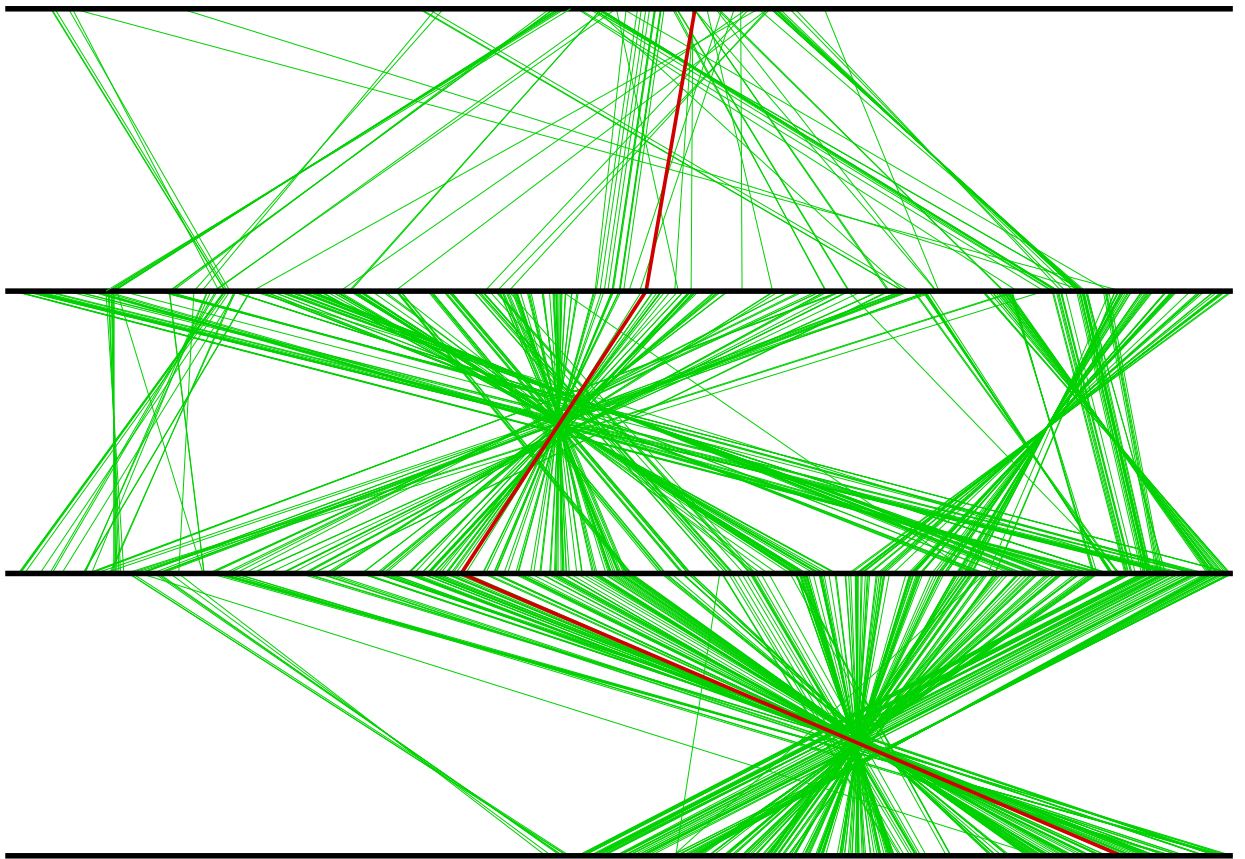
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Dr\_6

OI\_4

Ga\_8

Tn\_1



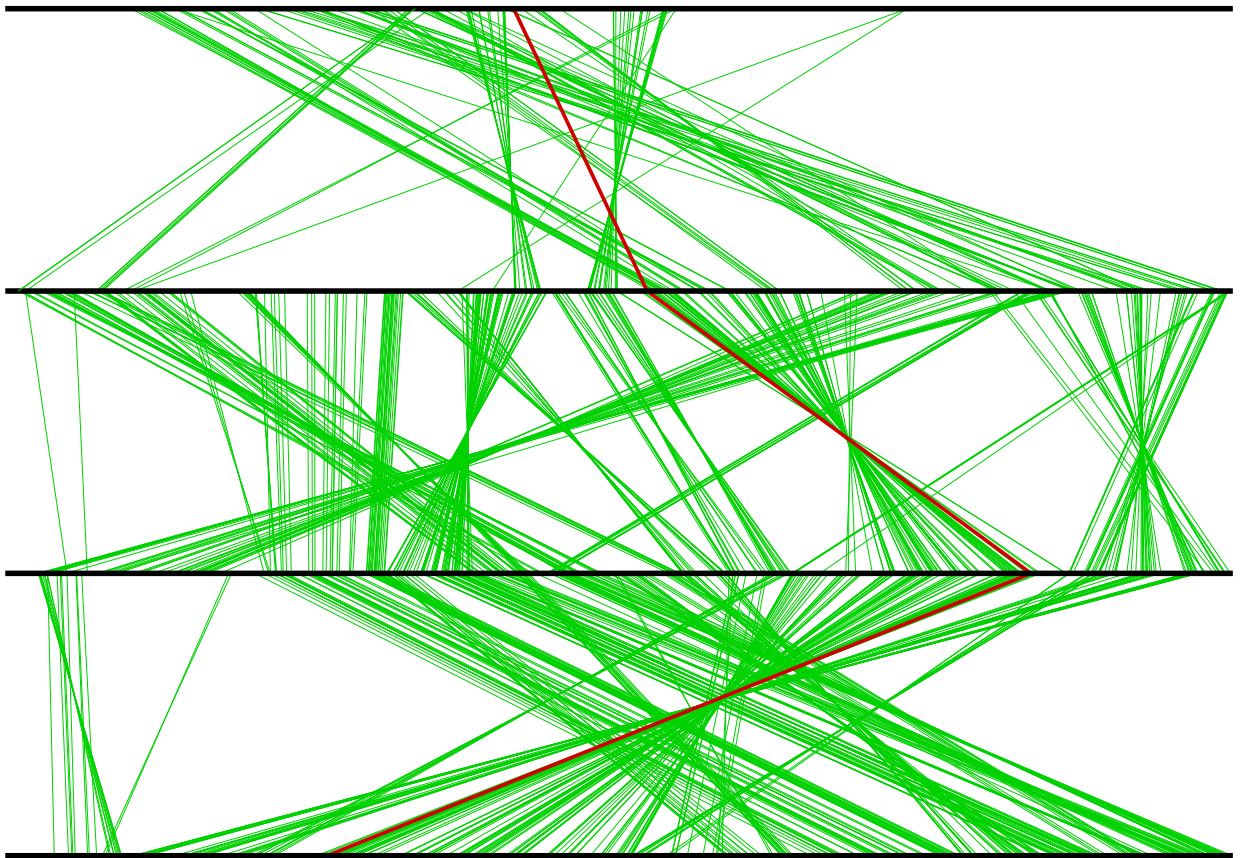
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Dr\_18

OI\_6

Ga\_19

Tn\_13

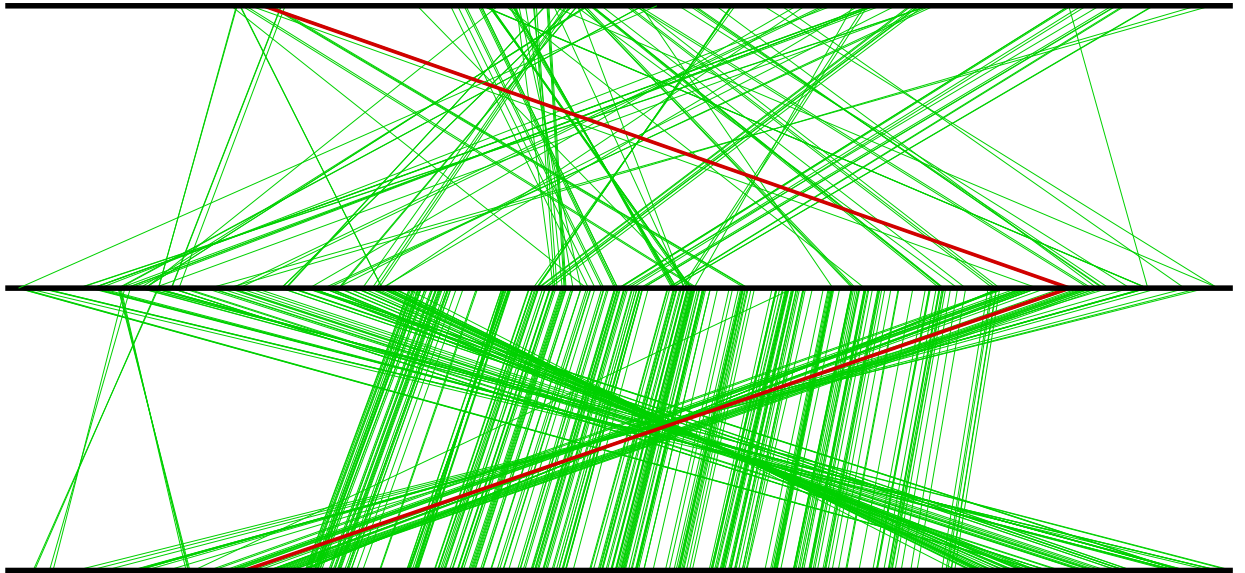


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Dr\_7

OI\_3

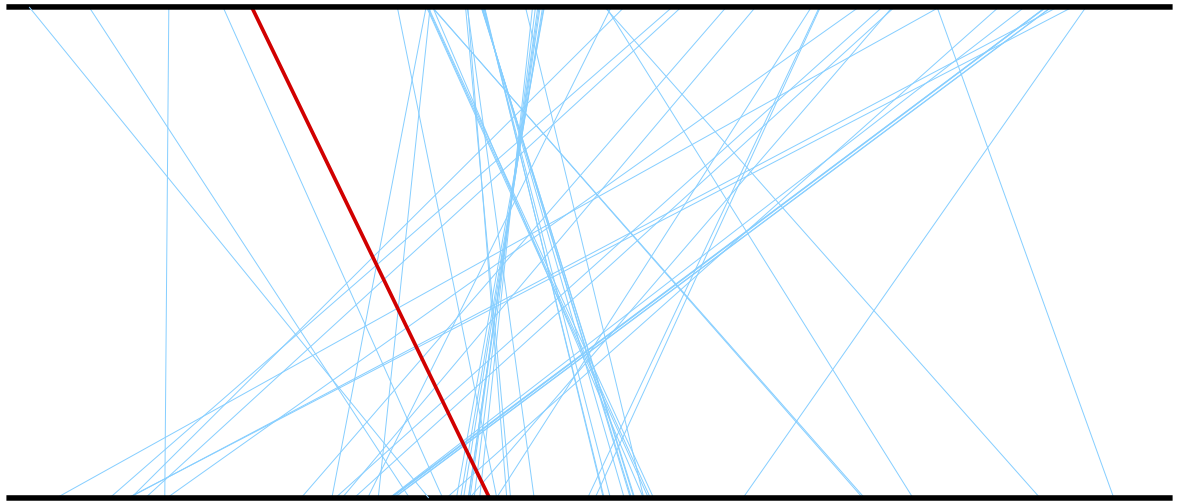
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**Dr\_7**

**Dr\_18**

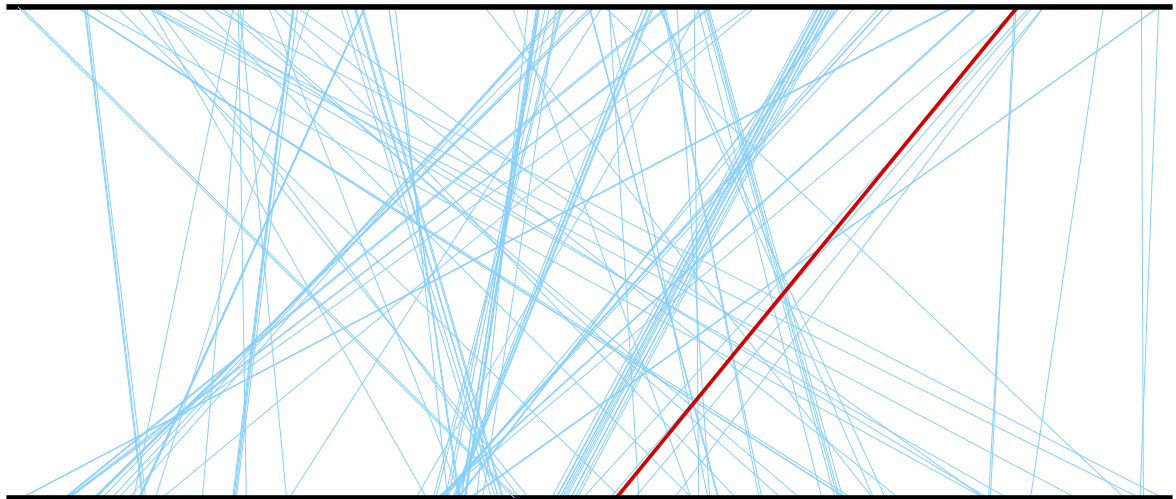


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**OI\_3**

**OI\_6**

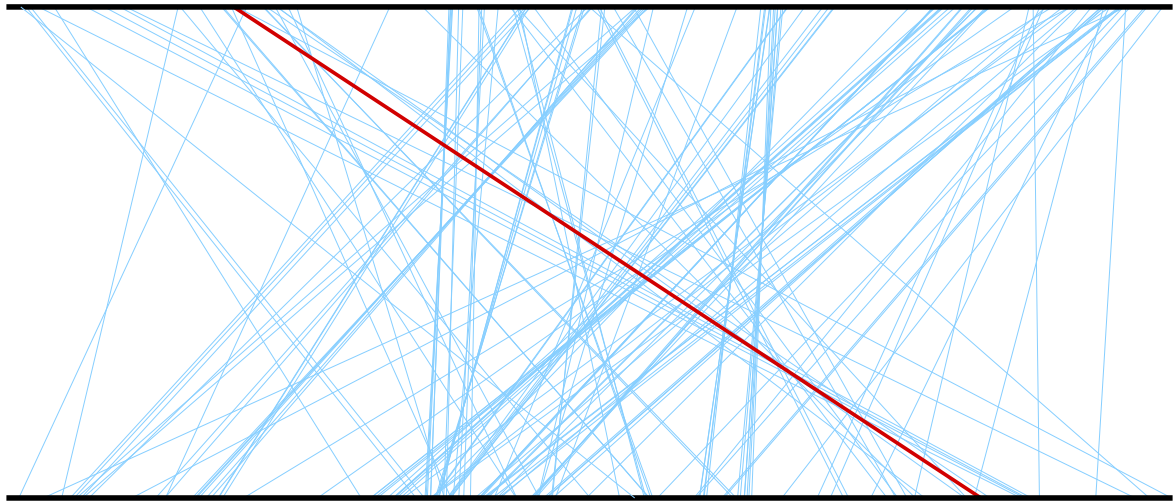


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**Ga\_19**



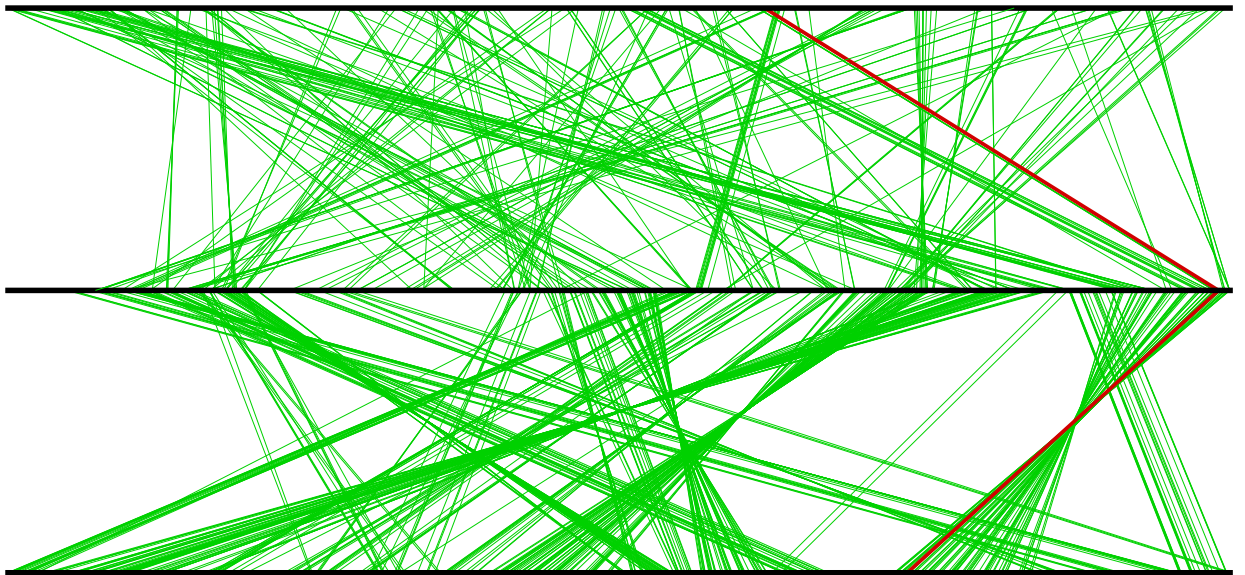
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Dr\_2

OI\_17

Ga\_3

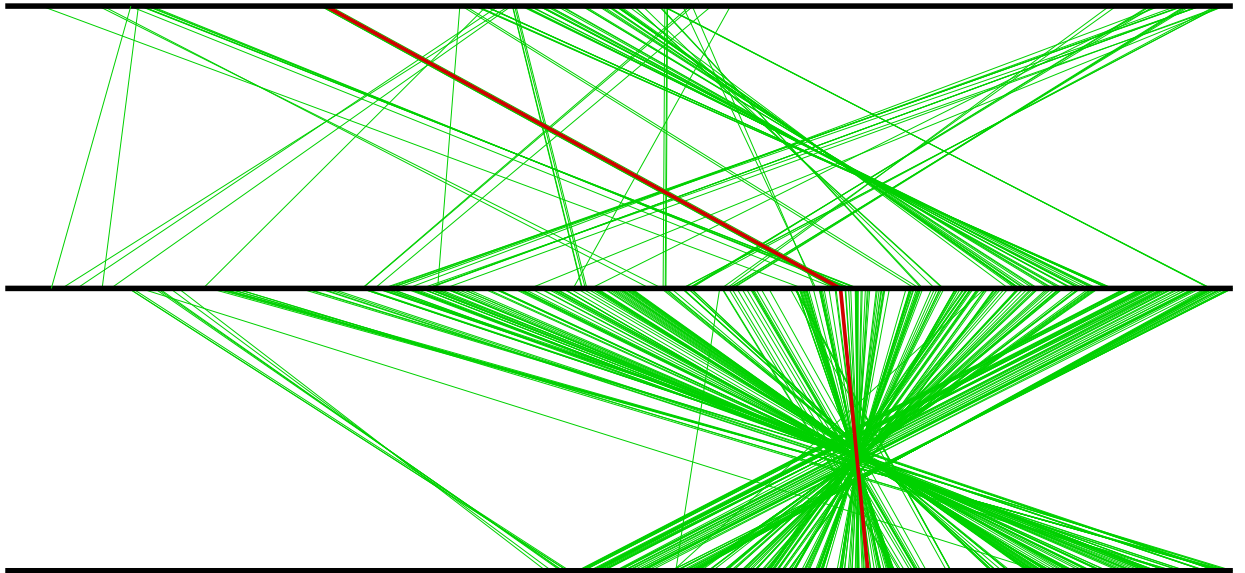


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Dr\_22

Ga\_8

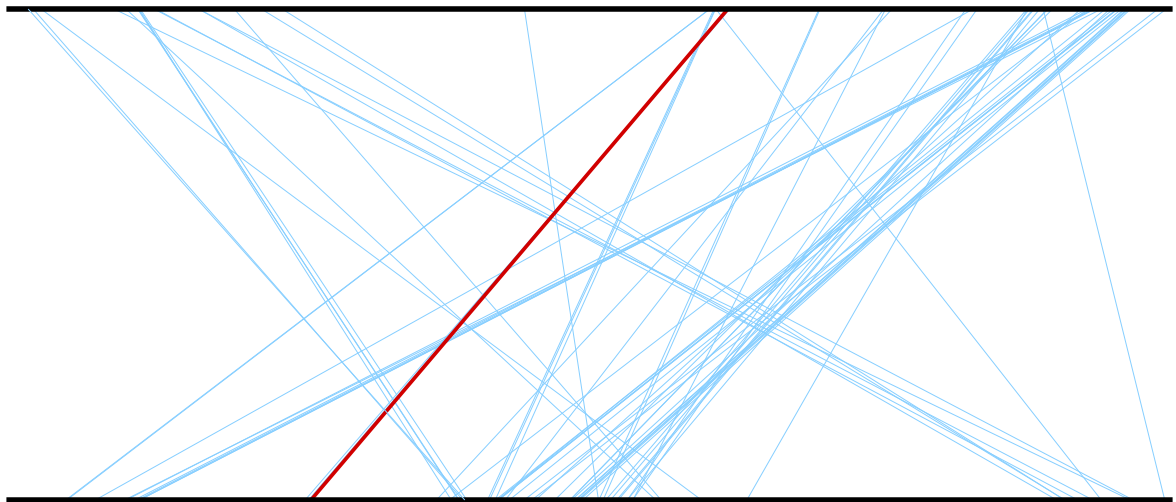
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**Dr\_2**



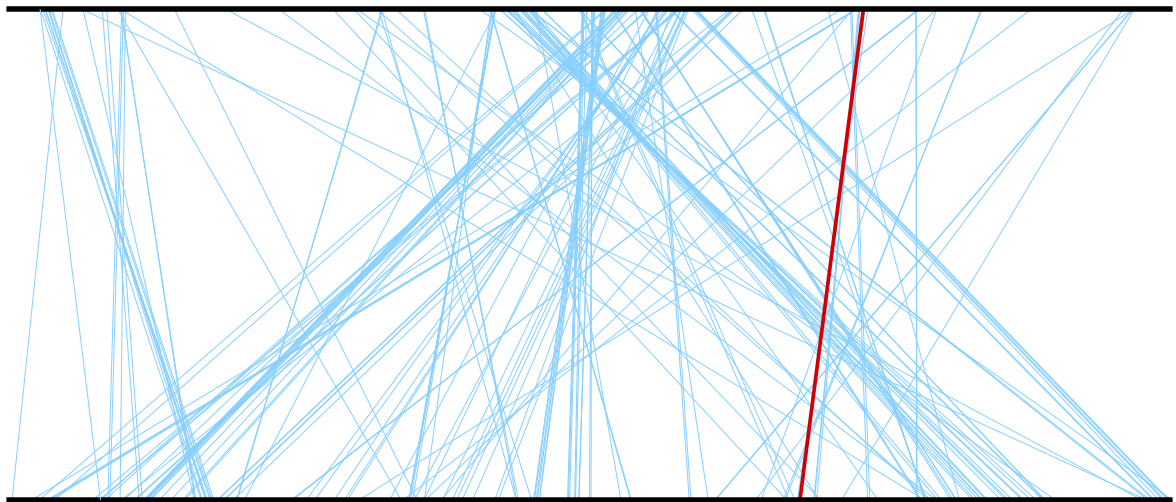
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**Ga\_3**

**Ga\_8**



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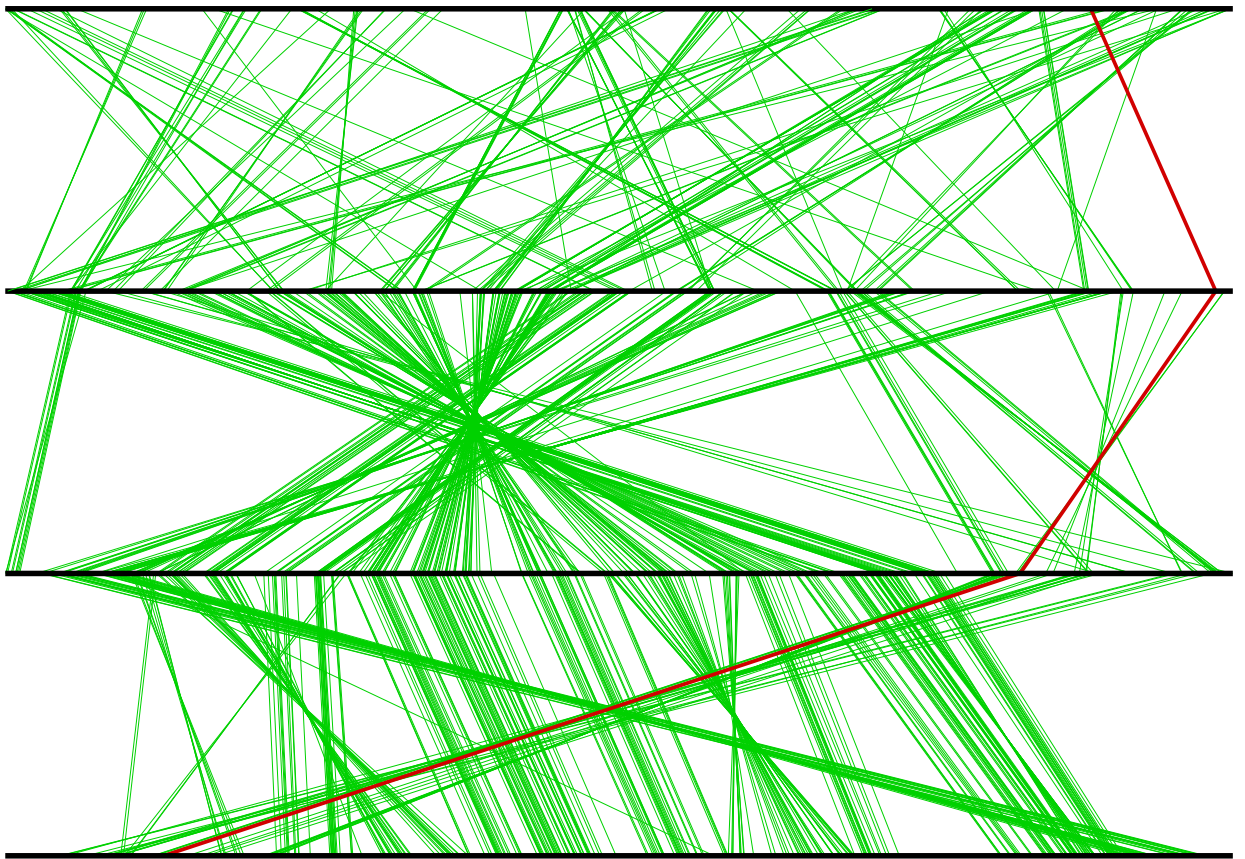
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Dr\_17

OI\_22

Ga\_15

Tn\_10



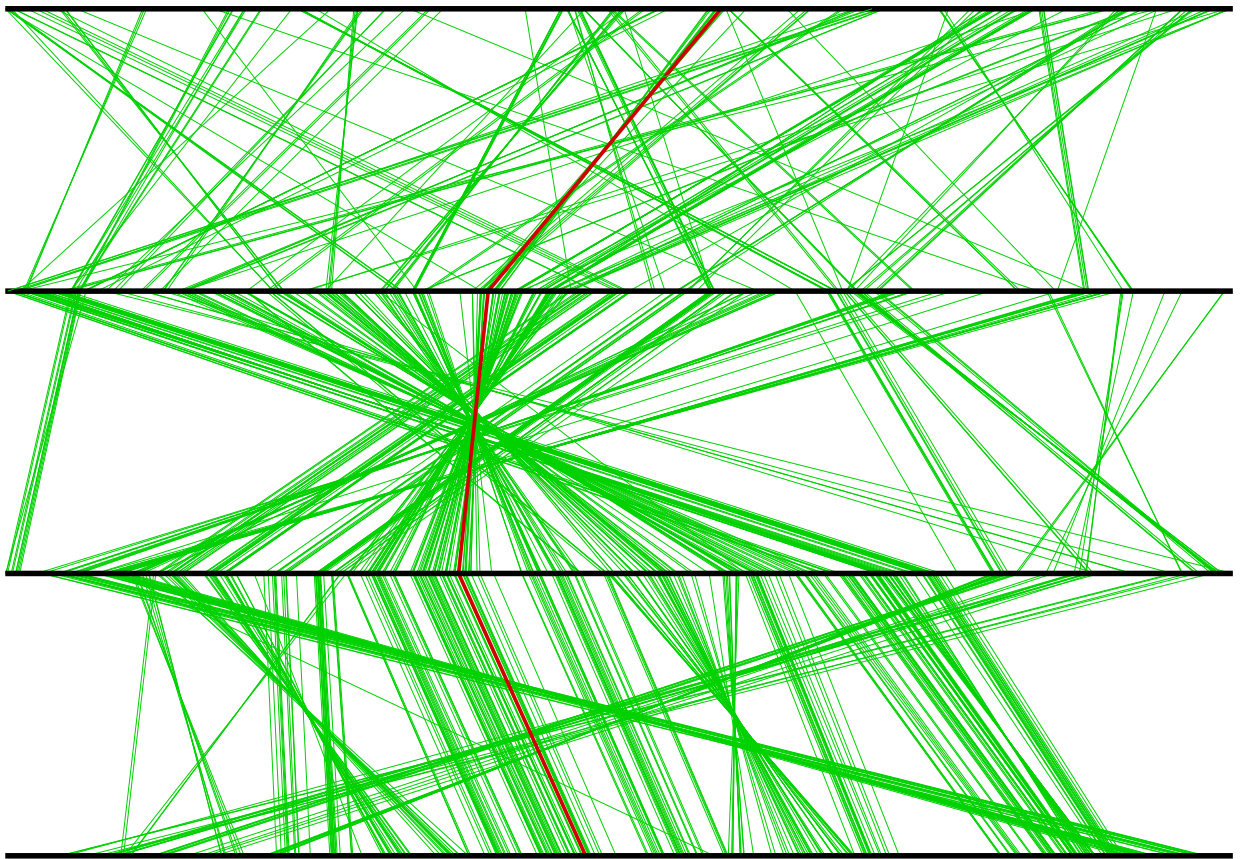
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Dr\_17

OI\_22

Ga\_15

Tn\_10



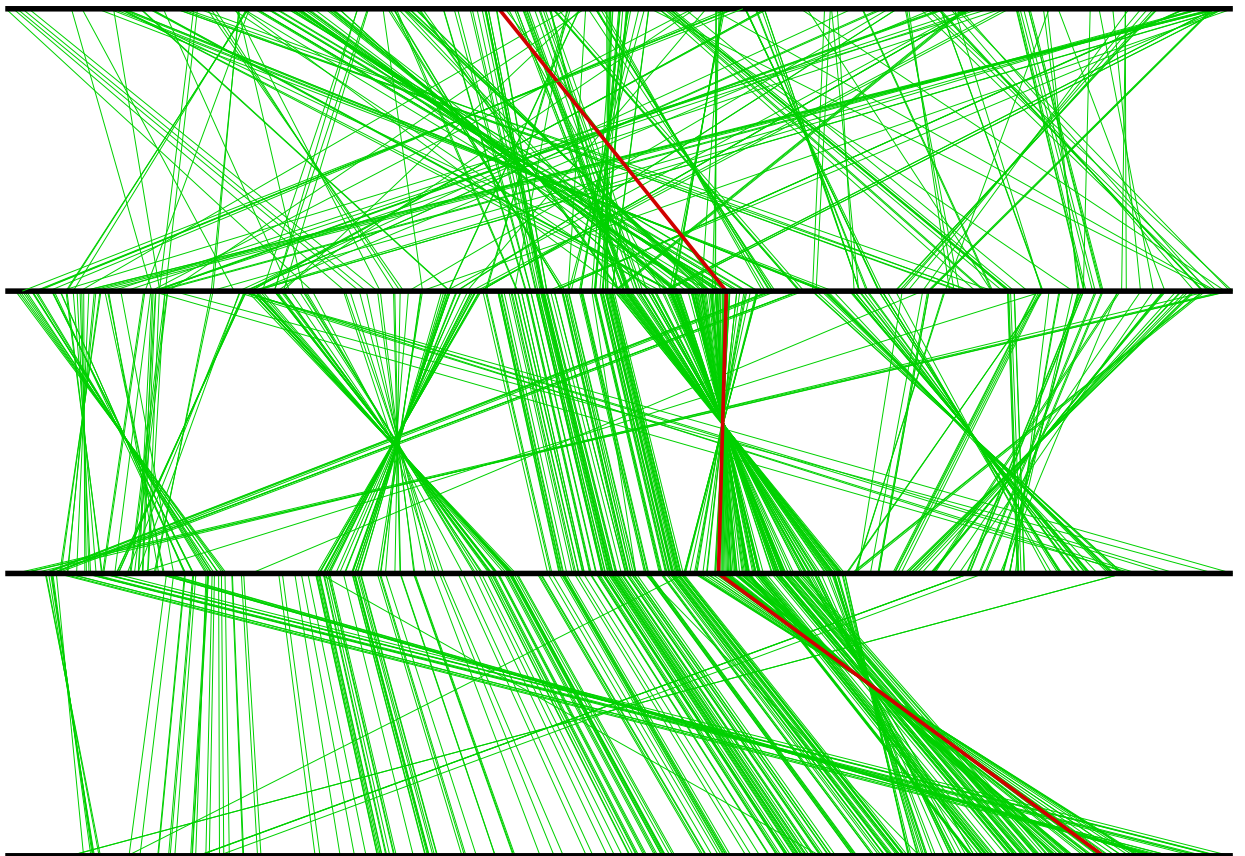
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Dr\_16

OI\_16

Ga\_20

Tn\_8



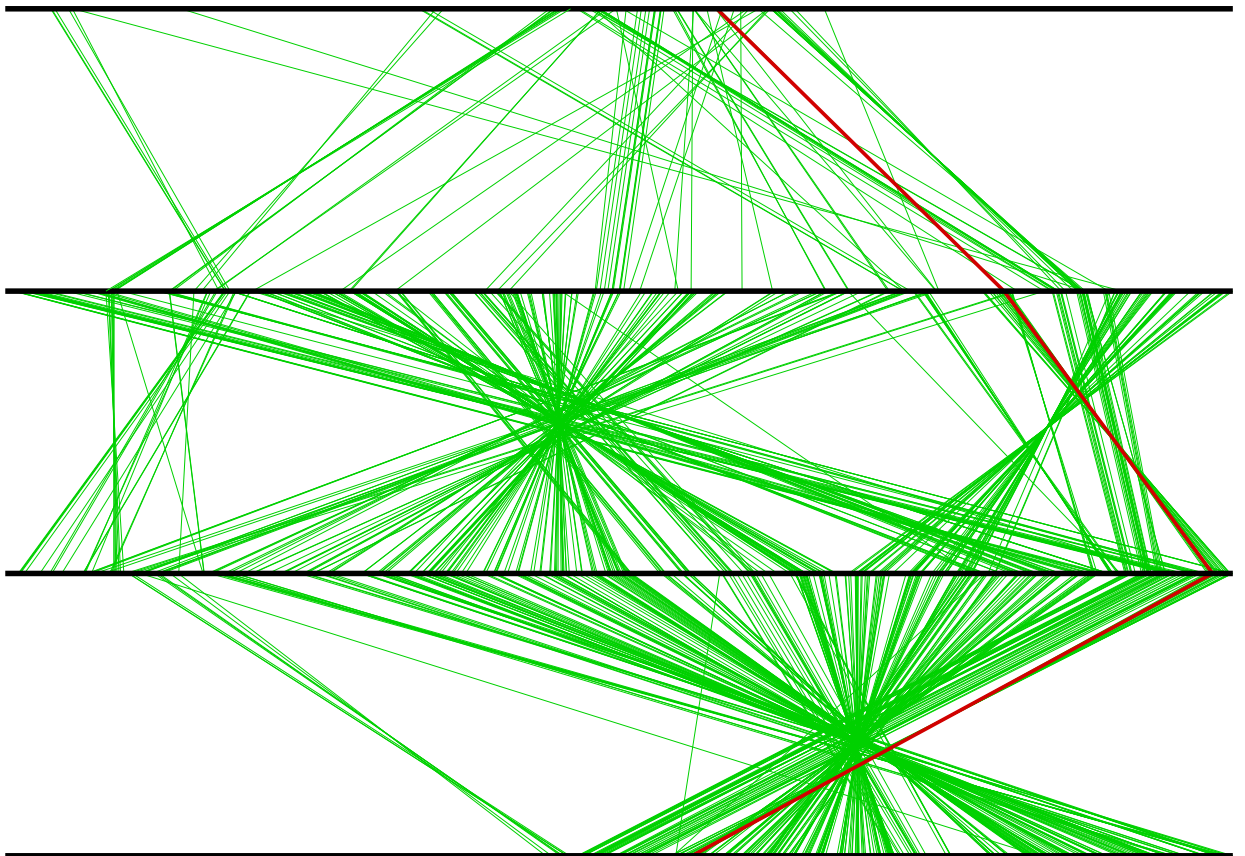
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Dr\_6

OI\_4

Ga\_8

Tn\_1



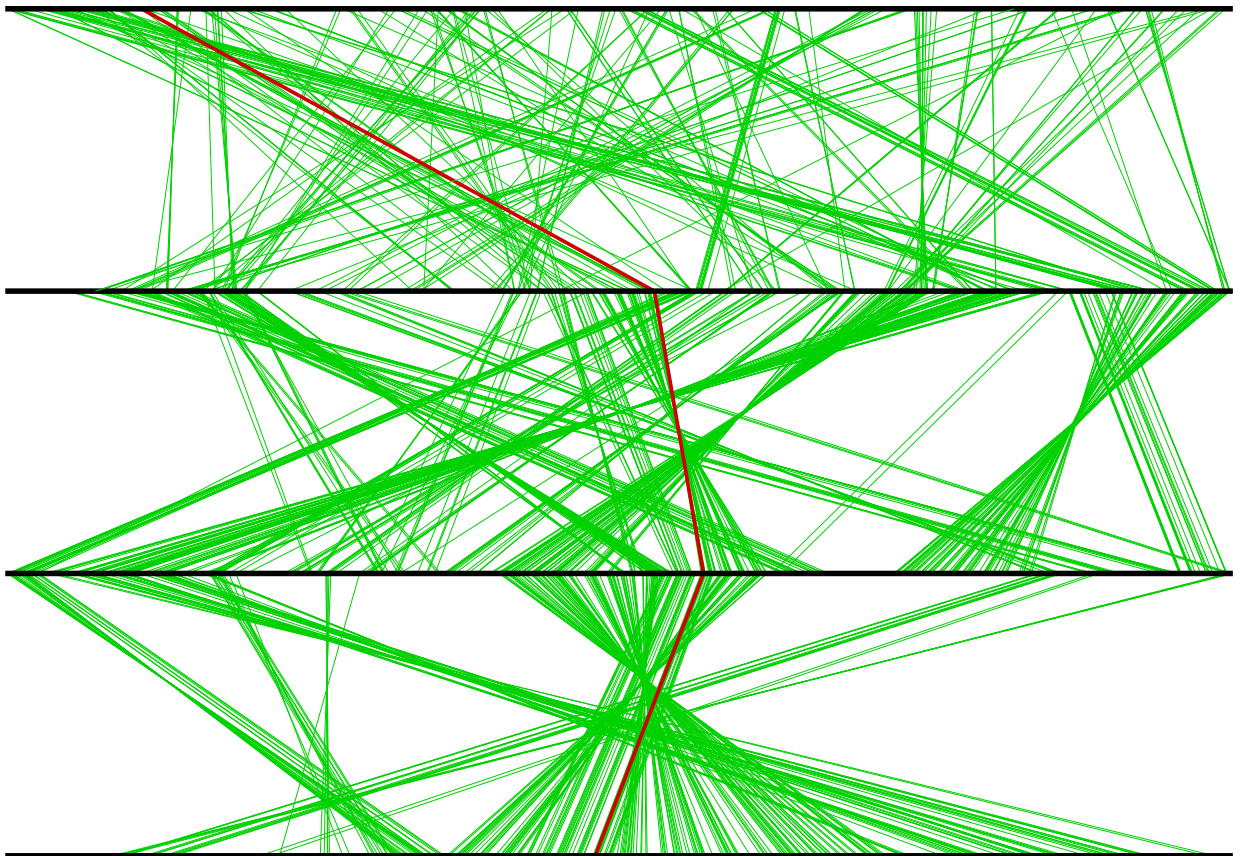
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Dr\_2

OI\_17

Ga\_3

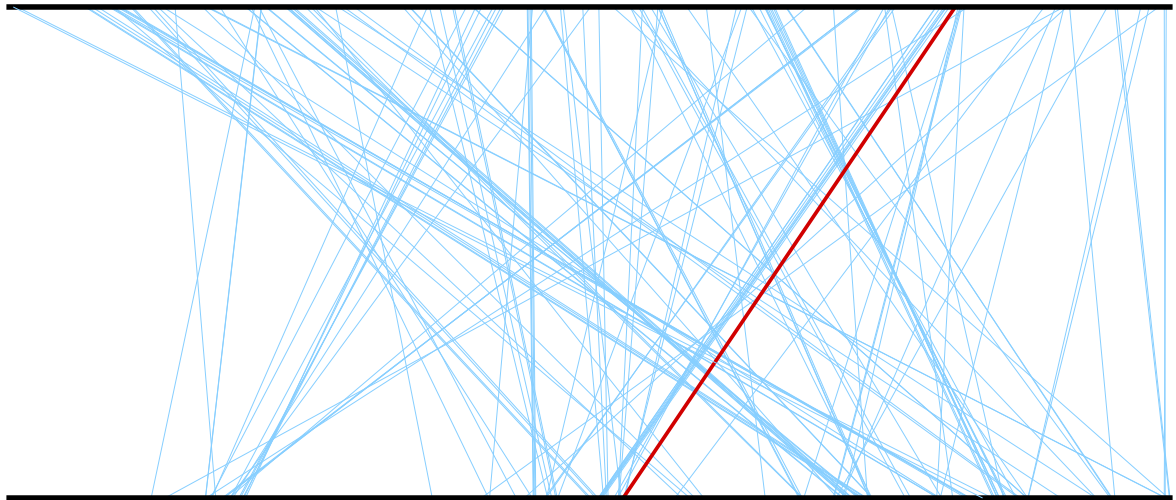
Tn\_15



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**OI\_4**

**OI\_17**



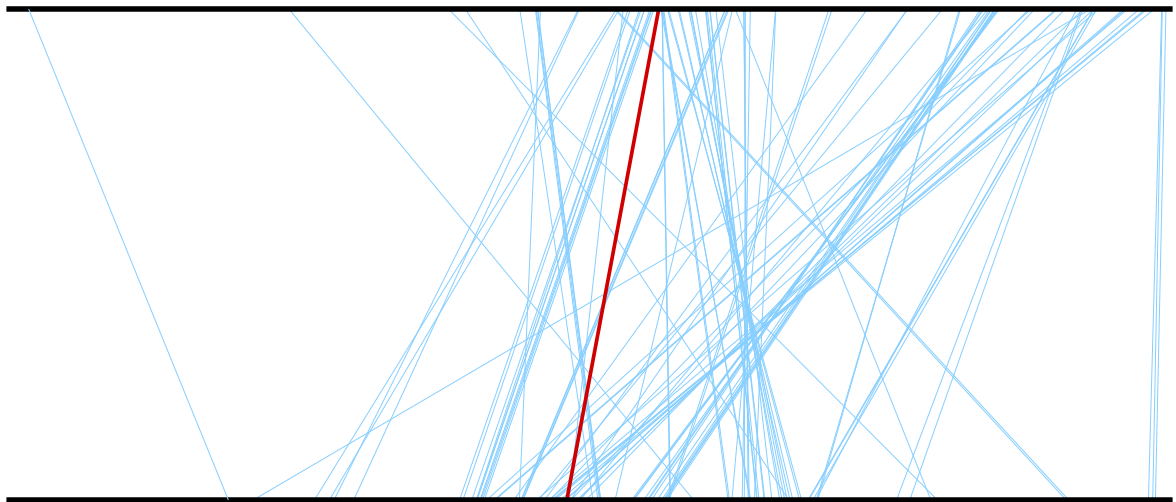
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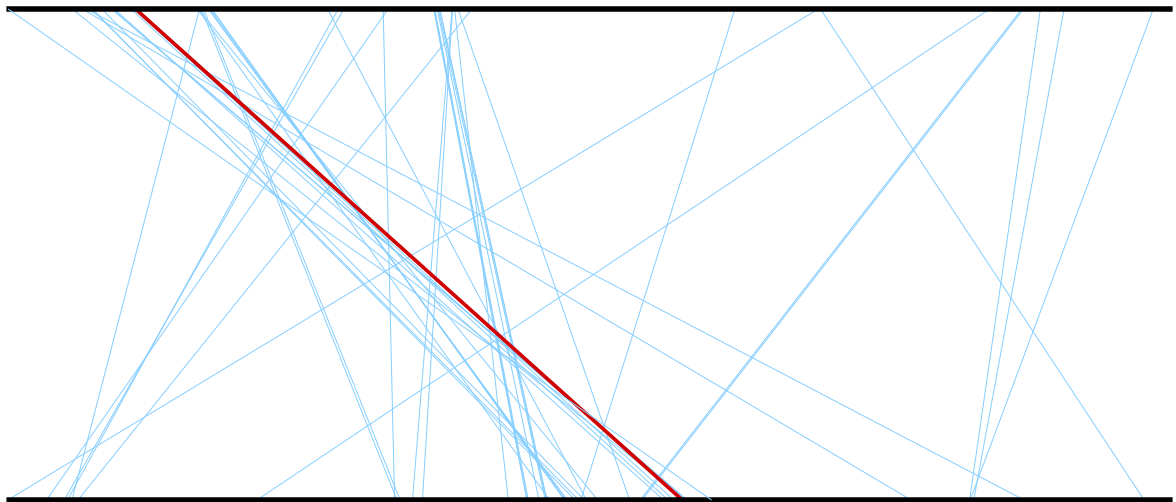
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**Dr\_2**



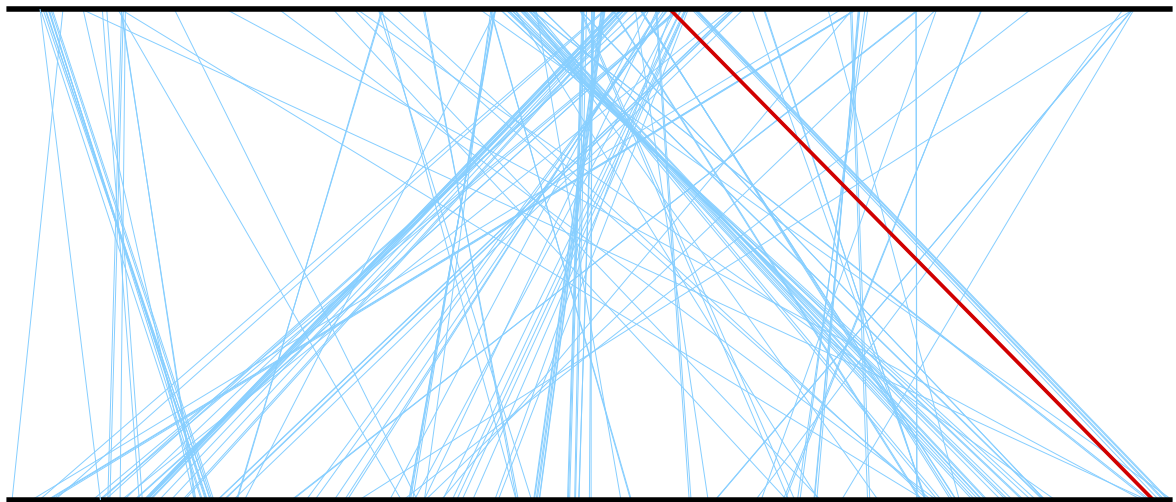
**Dr\_6**

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**Ga\_3**

**Ga\_8**



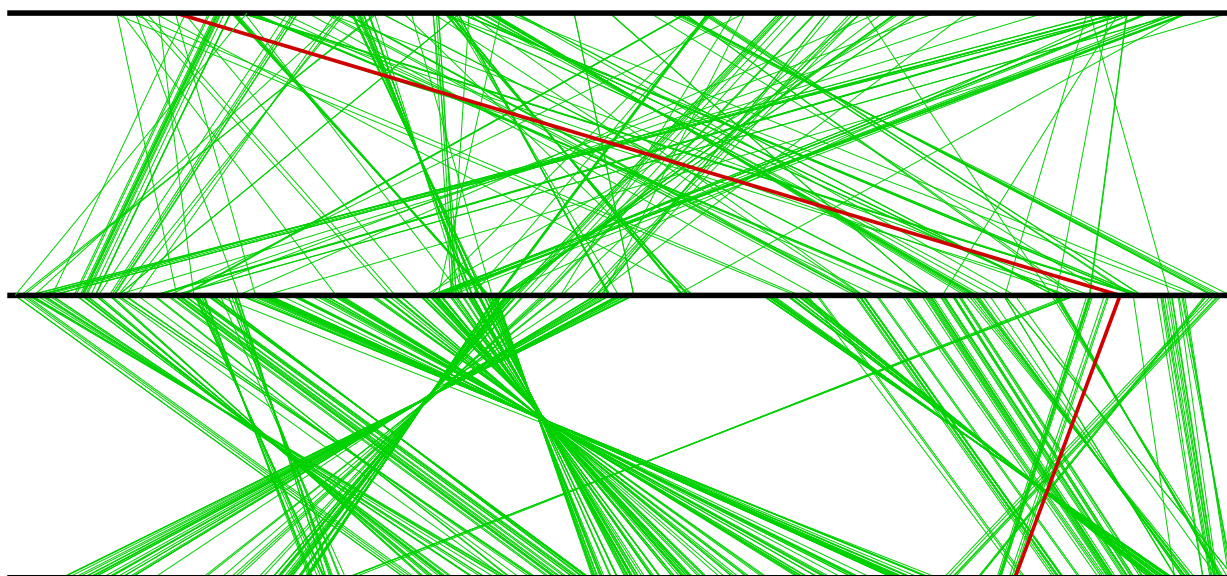
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Dr\_5

Ol\_9

Tn\_12



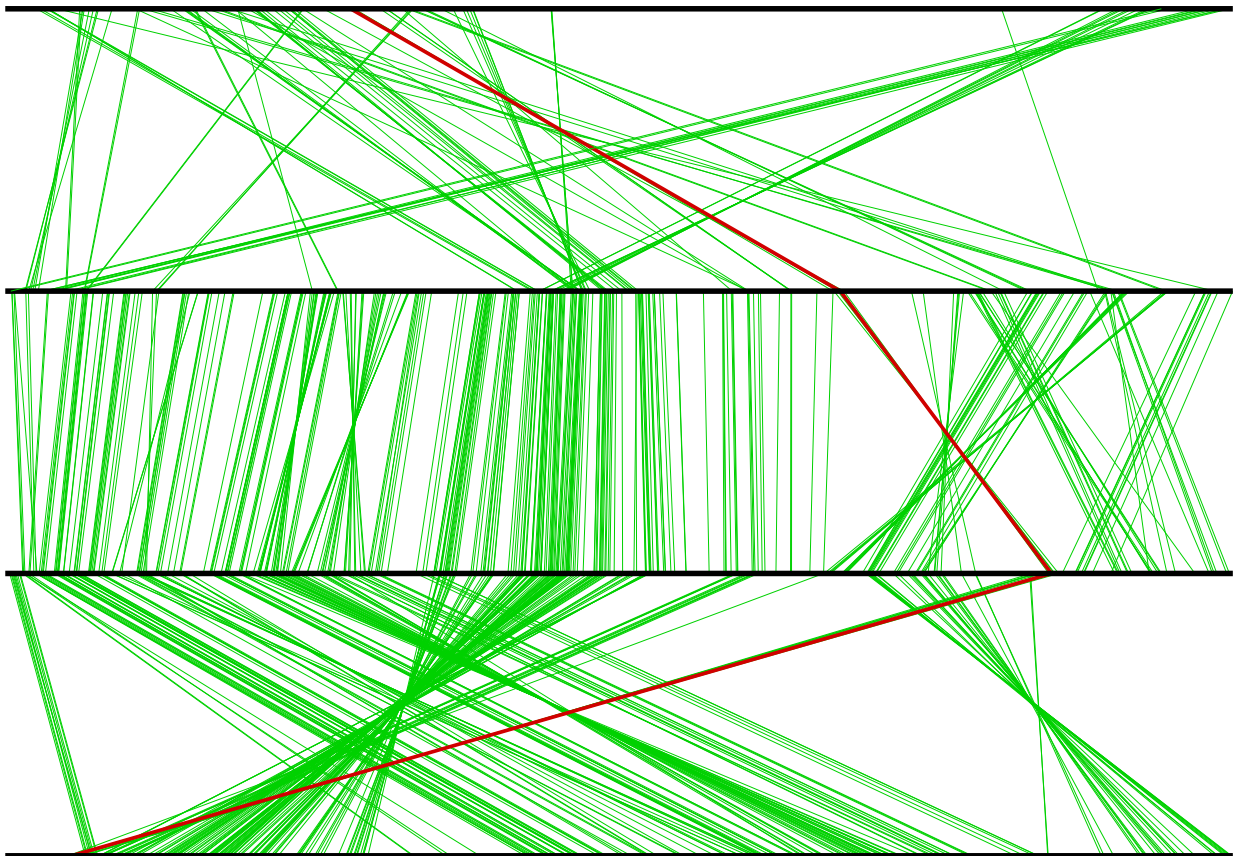
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Dr\_10

OI\_12

Ga\_14

Tn\_4

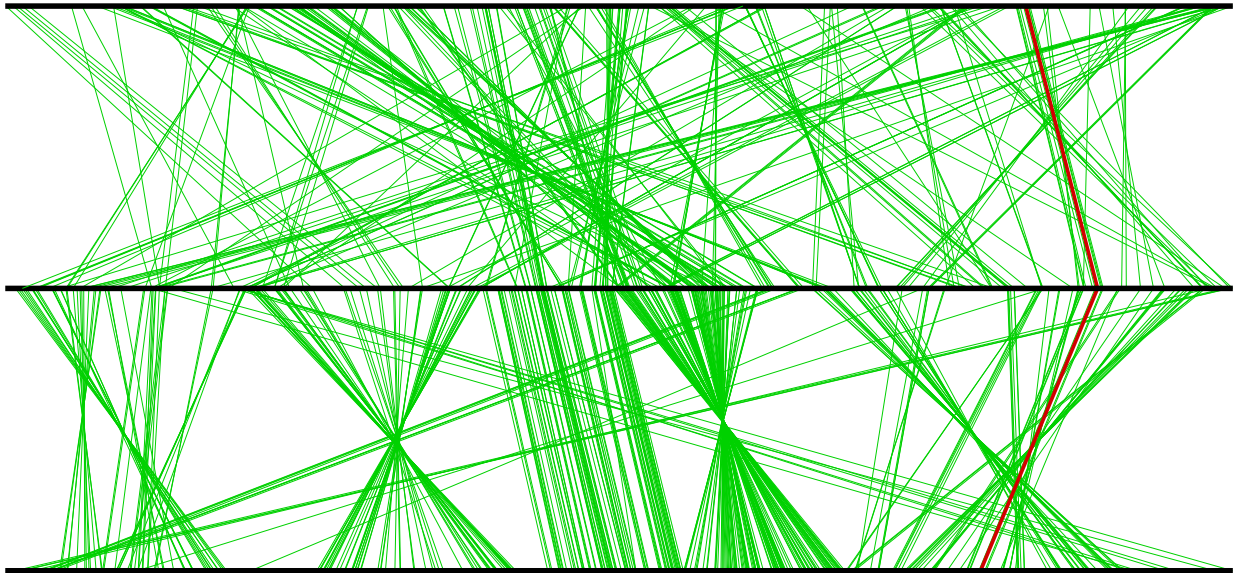


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Dr\_16

OI\_16

Ga\_20



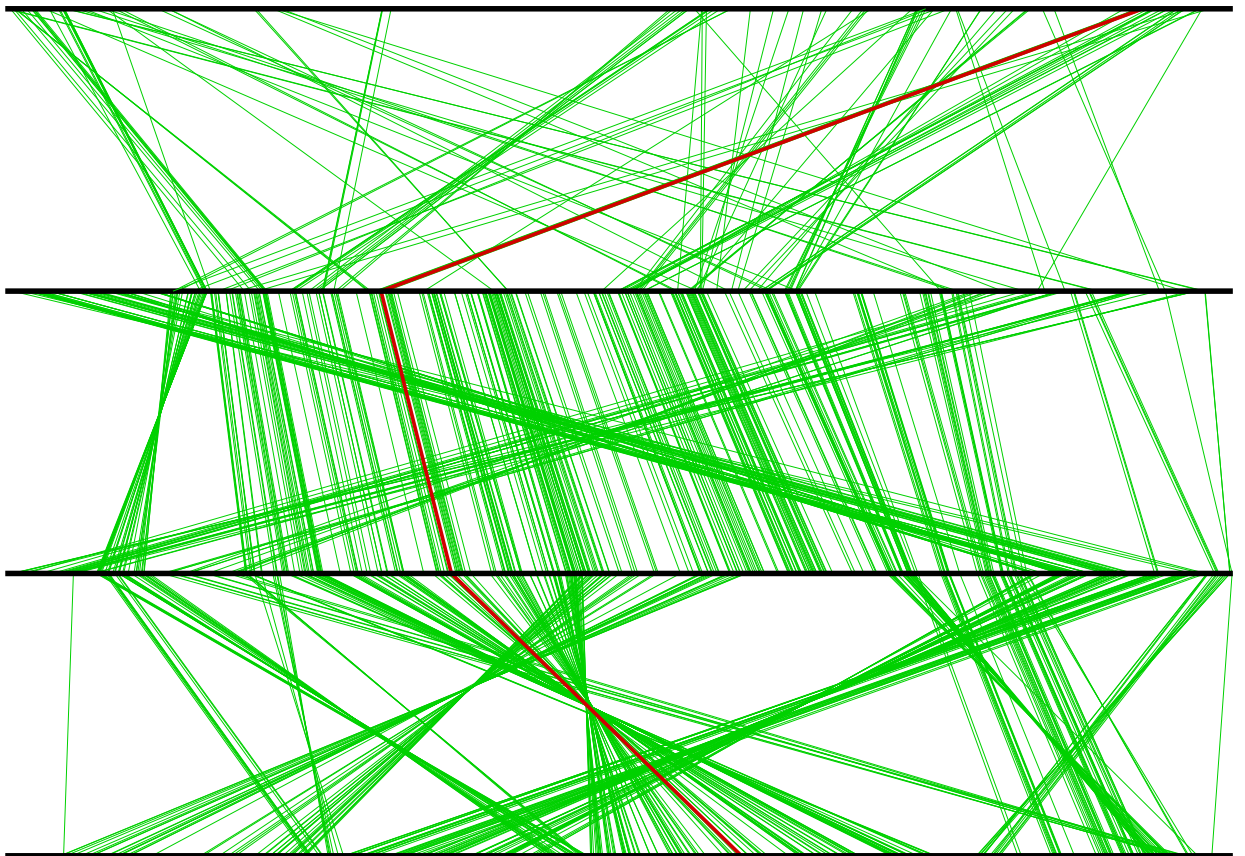
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Dr\_8

OI\_9

Ga\_13

Tn\_12



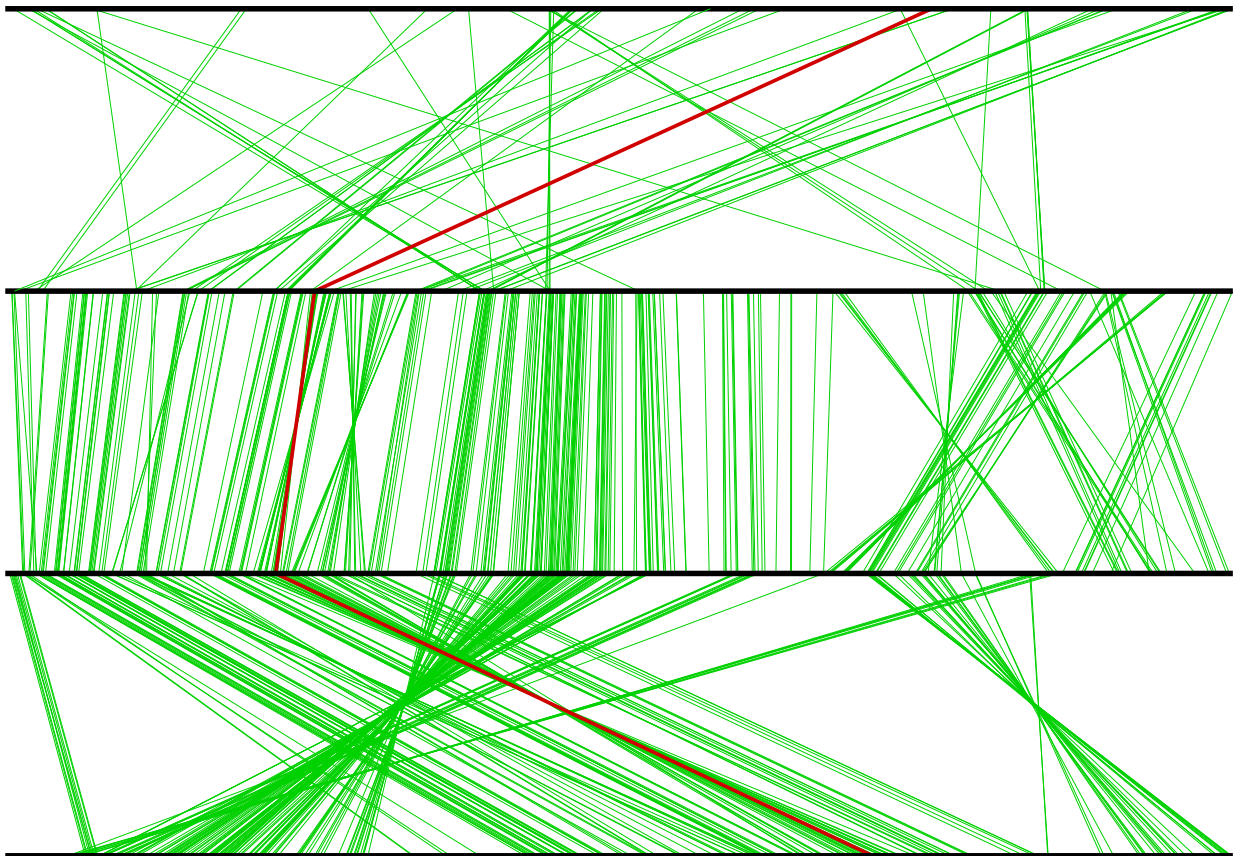
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Dr\_5

OI\_12

Ga\_14

Tn\_4

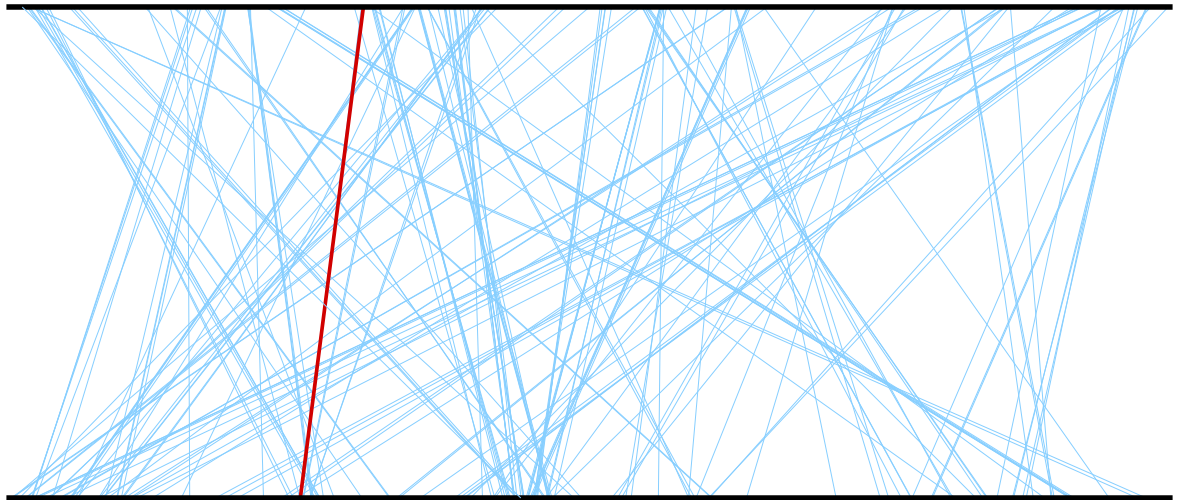




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**OI\_9**

**OI\_12**

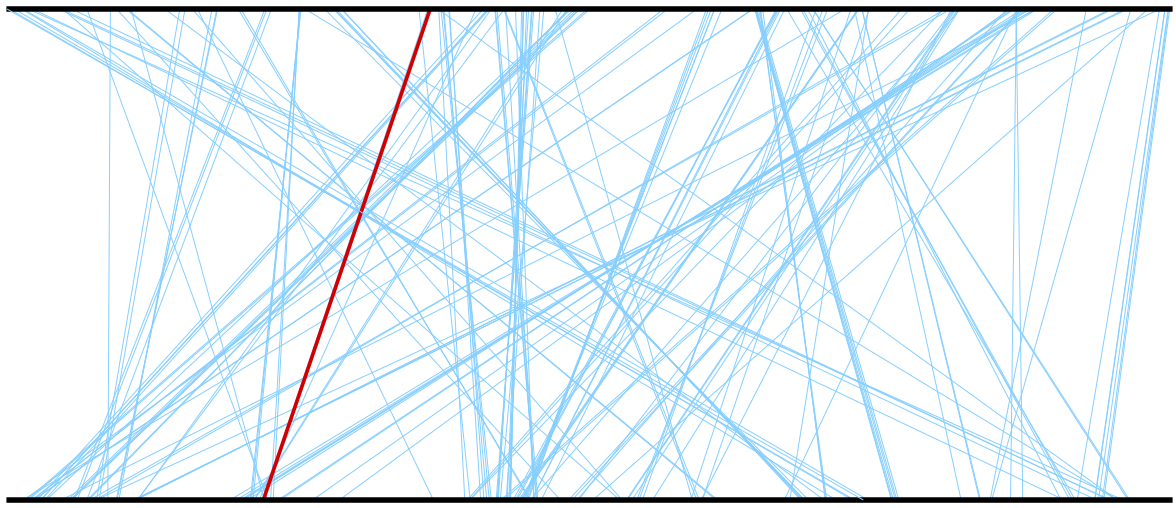


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**Ga\_13**

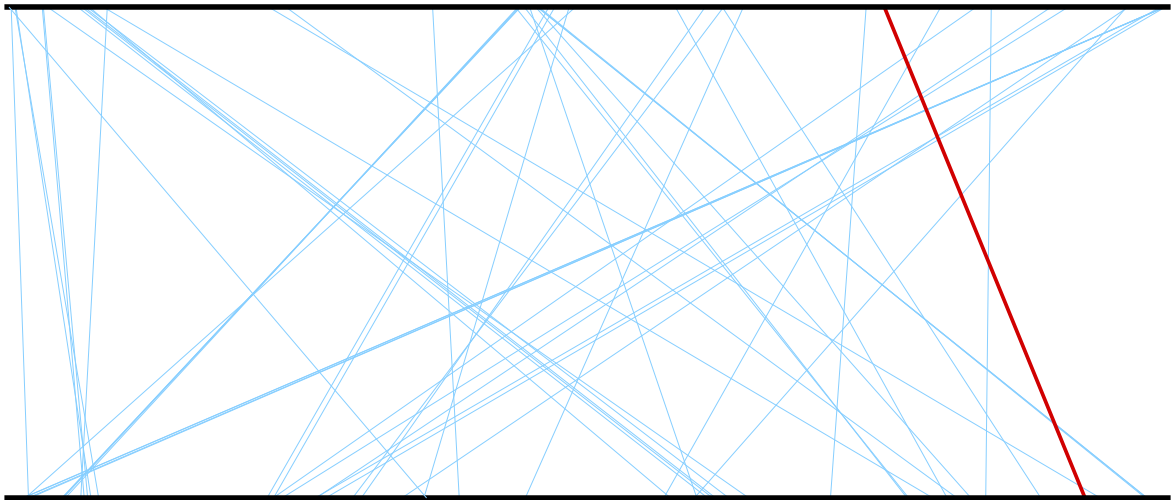
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**Dr\_5**



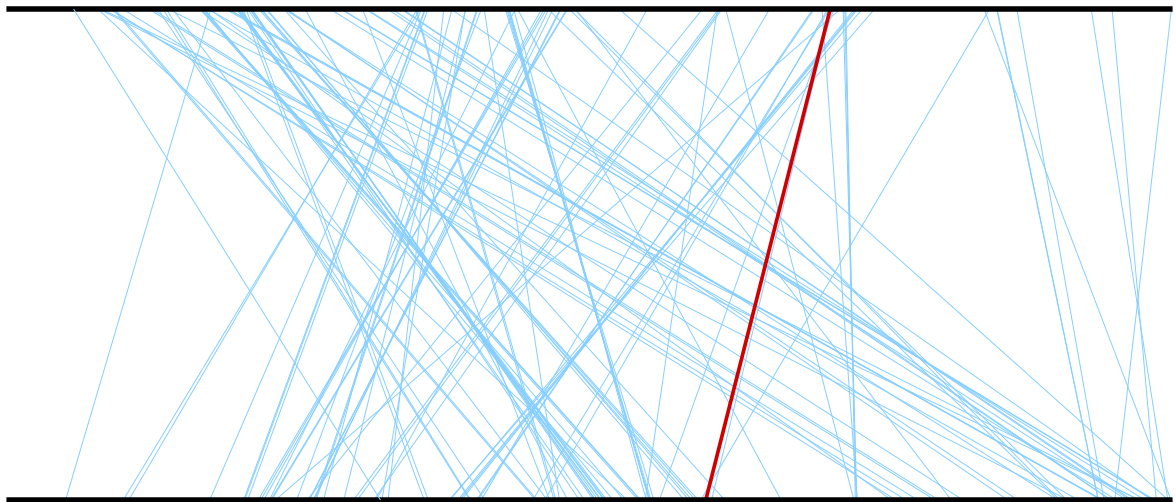
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**Tn\_4**

**Tn\_12**

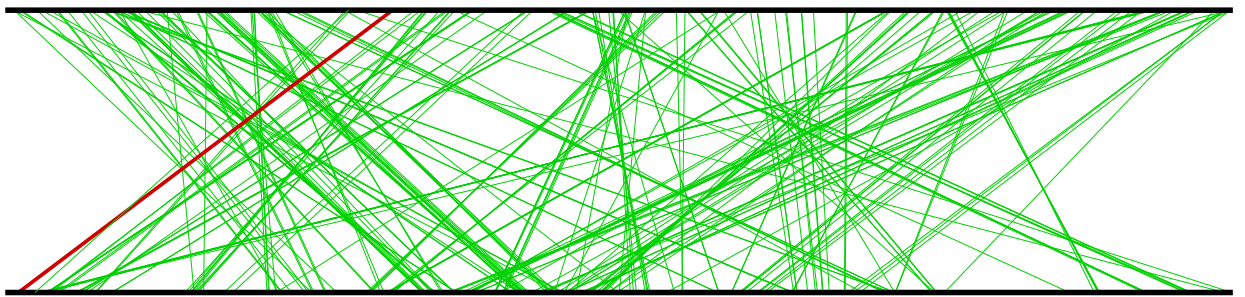


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Dr\_25

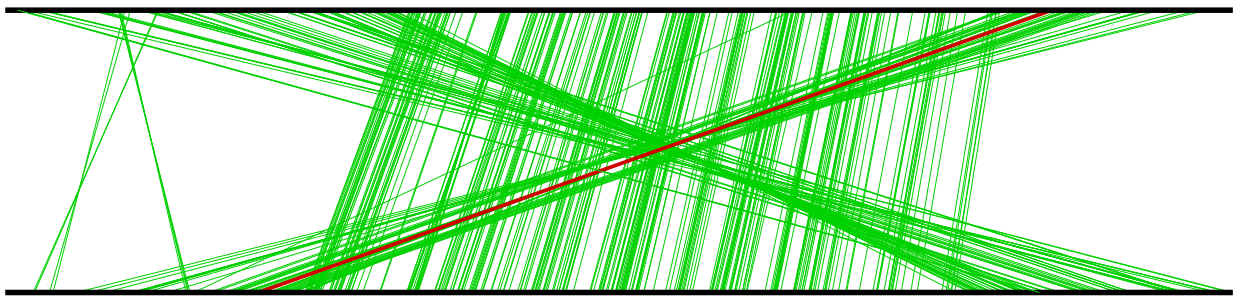
Ga\_19



# ntrk3b

OI\_3

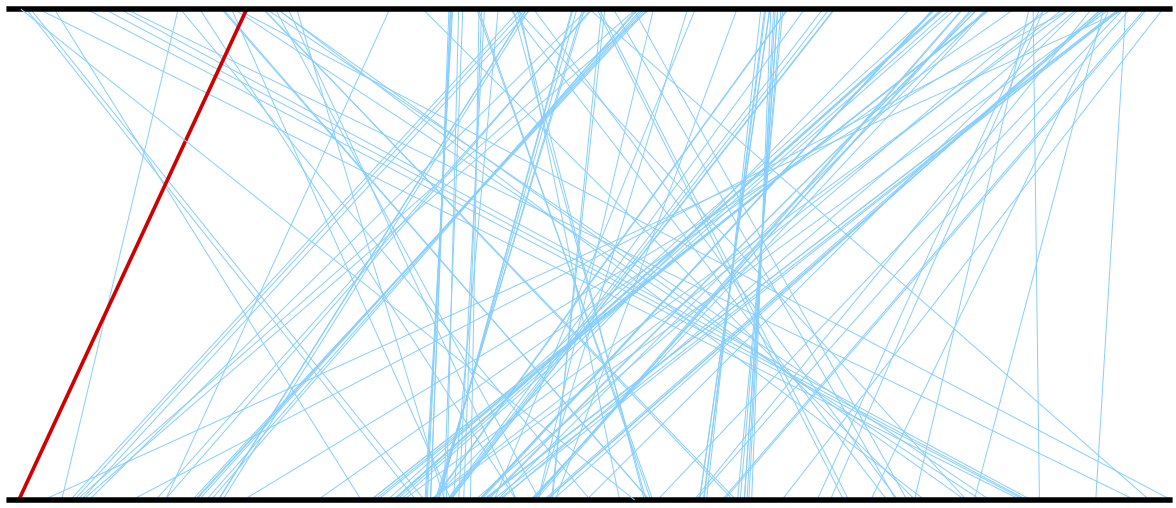
Ga\_2



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**Ga\_2**

**Ga\_19**



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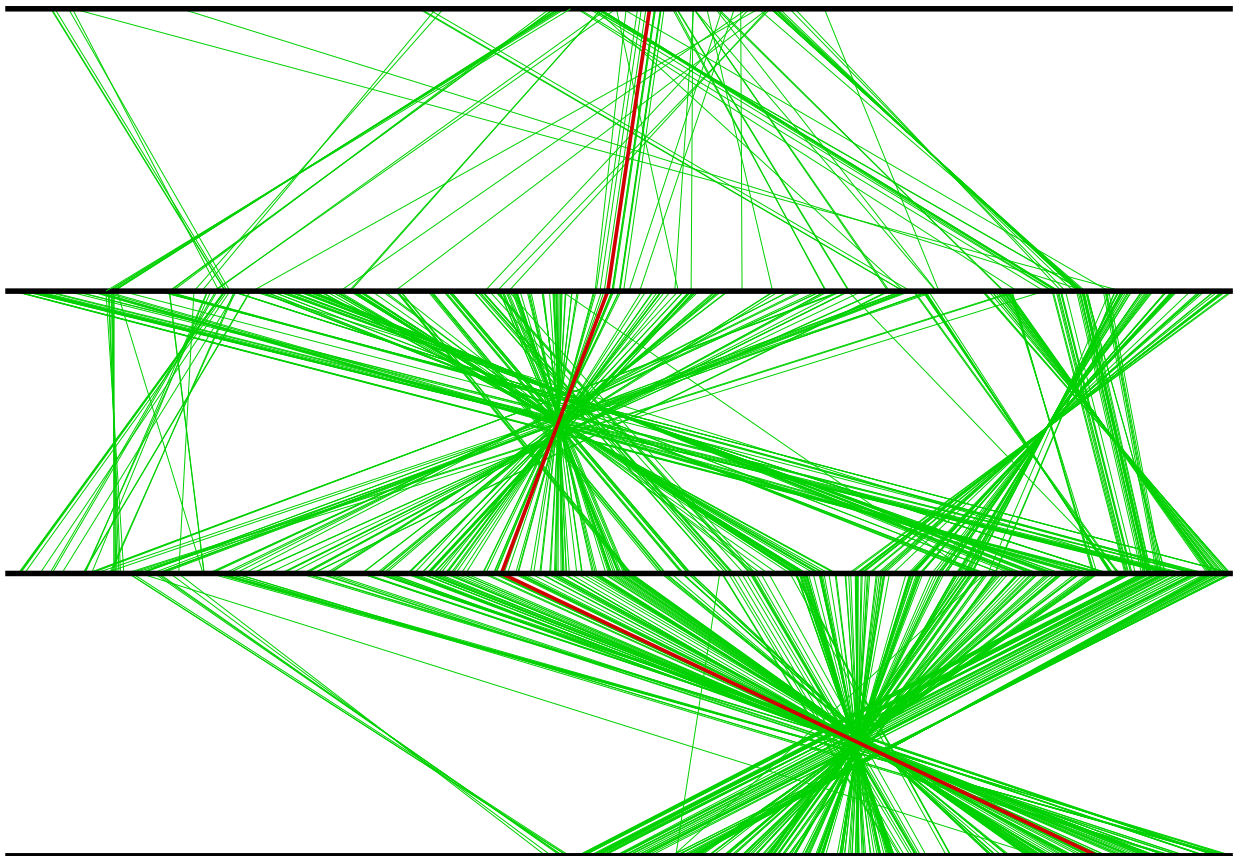
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Dr\_6

OI\_4

Ga\_8

Tn\_1

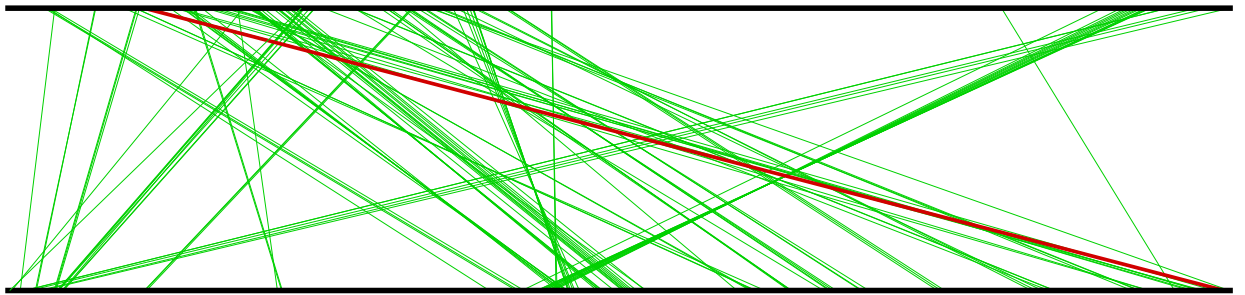




**ror2**

**Dr\_10**

**Ga\_14**



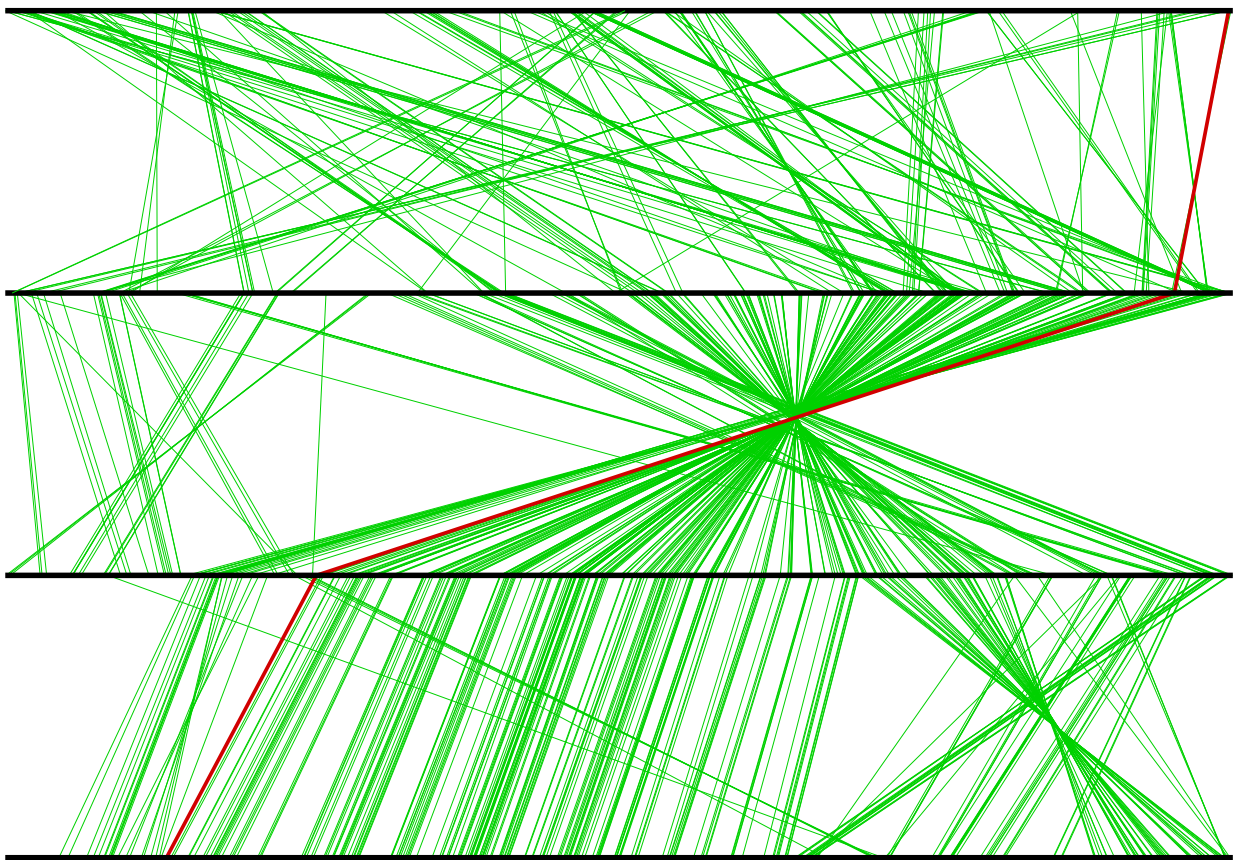
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Dr\_13

OI\_15

Ga\_6

Tn\_17



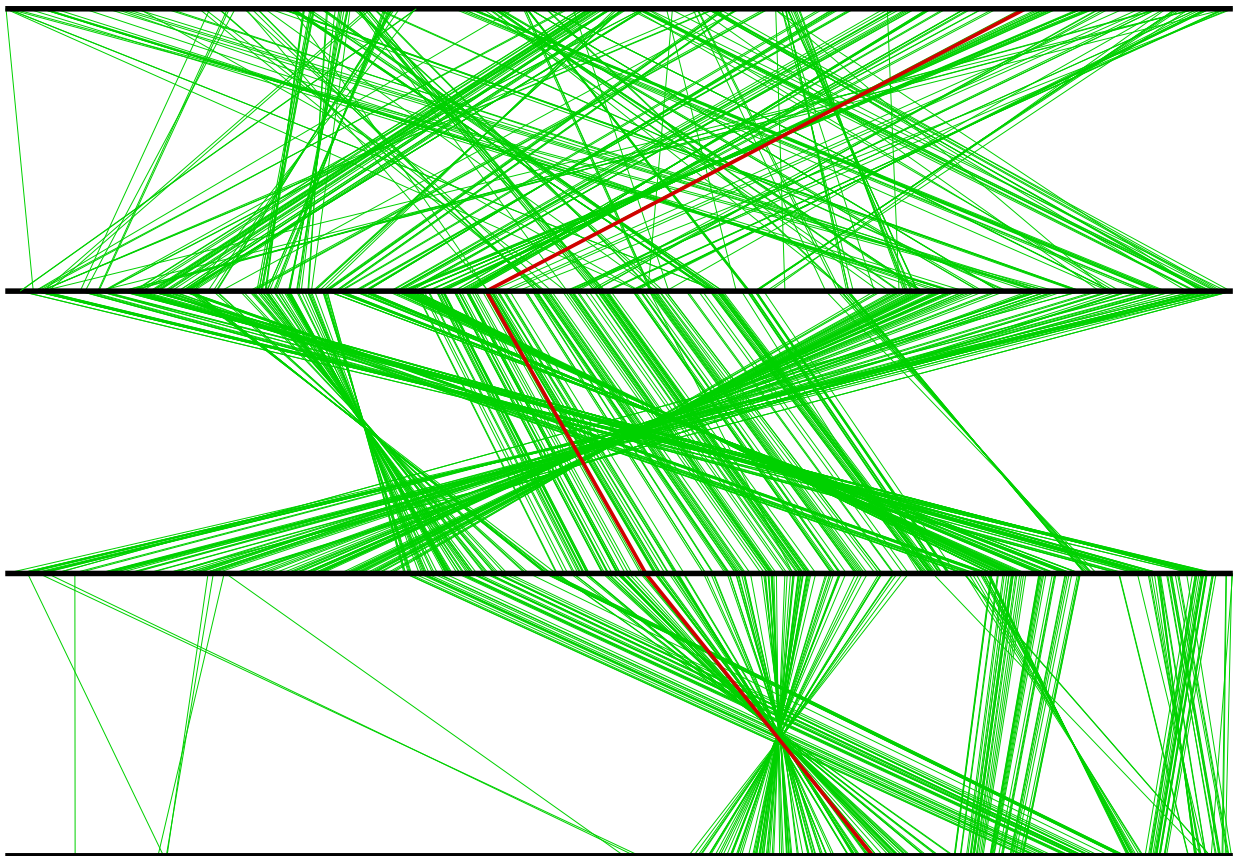
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Dr\_3

OI\_8

Ga\_11

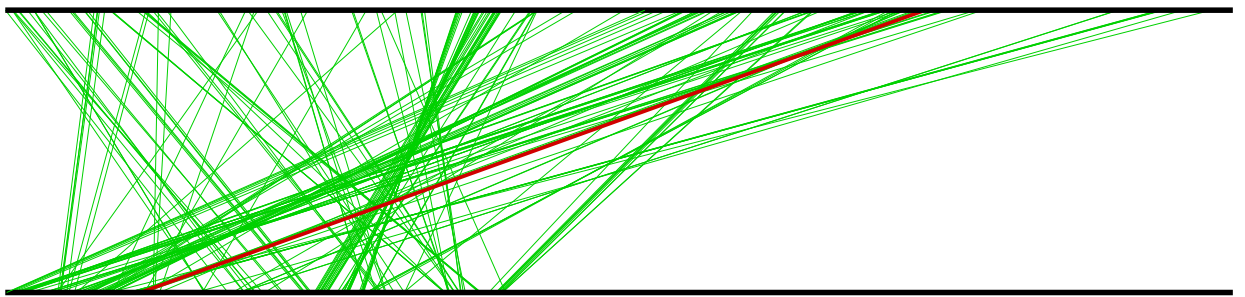
Tn\_3



**aatkb**

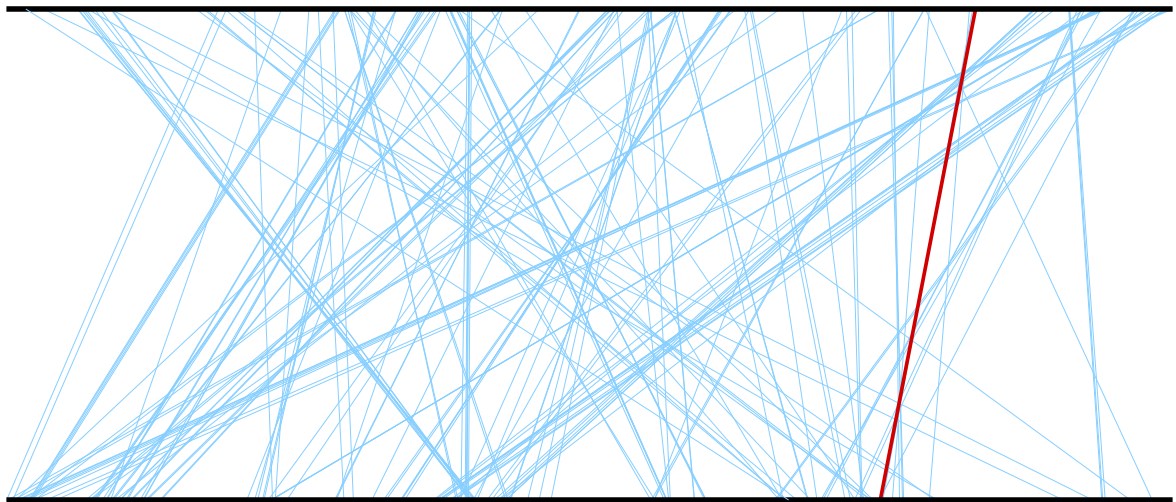
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**Tn\_2**



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**Dr\_3**

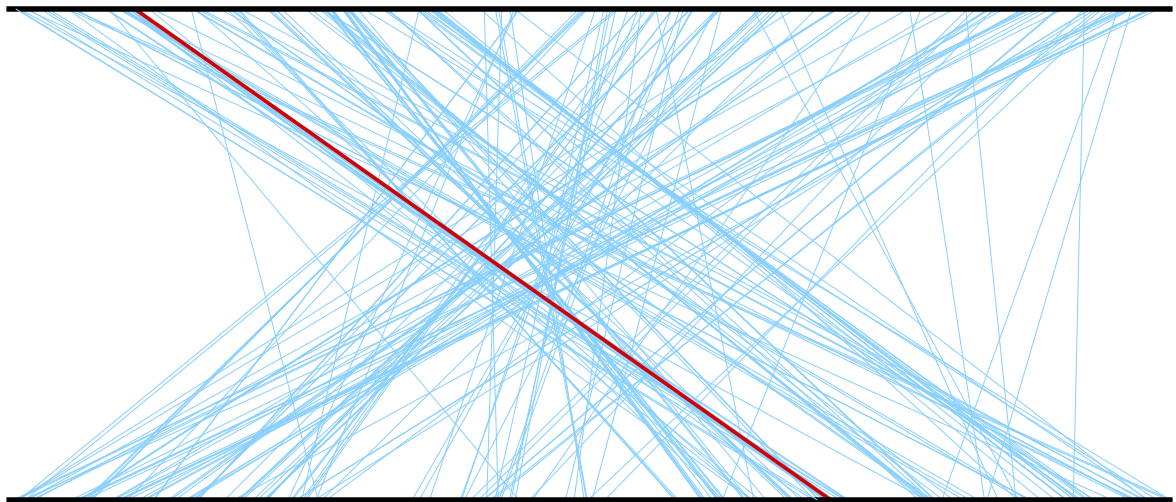


**Dr\_12**

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**Tn\_2**



**Tn\_3**

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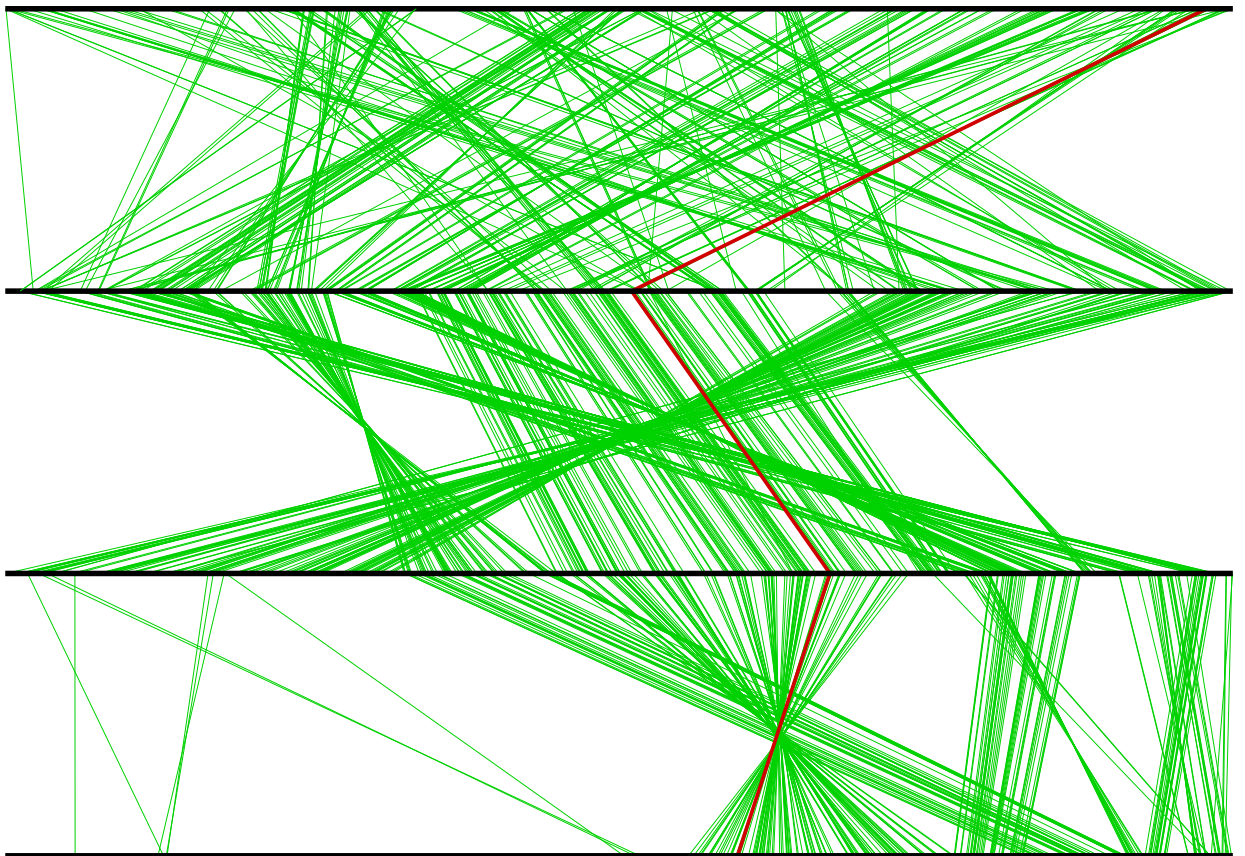
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Dr\_3

OI\_8

Ga\_11

Tn\_3



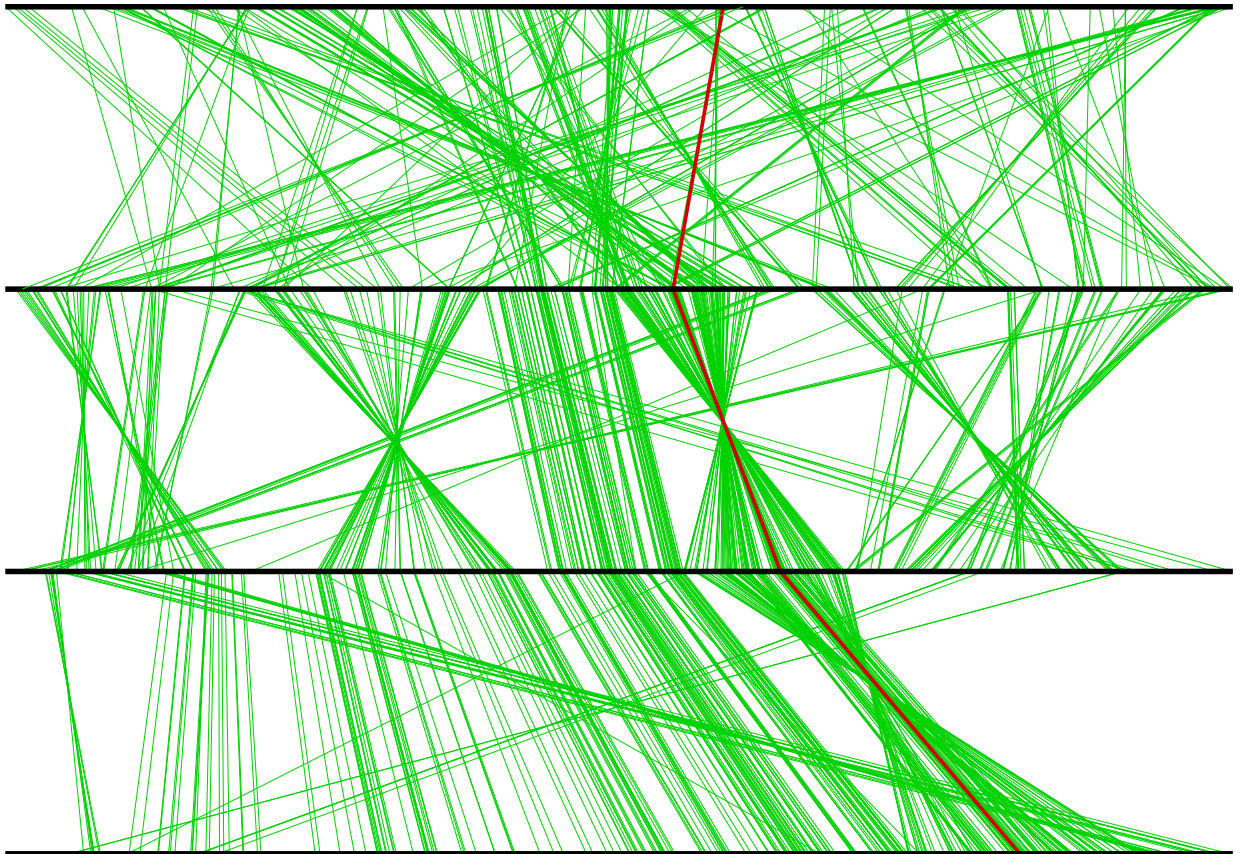
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Dr\_16

OI\_16

Ga\_20

Tn\_8





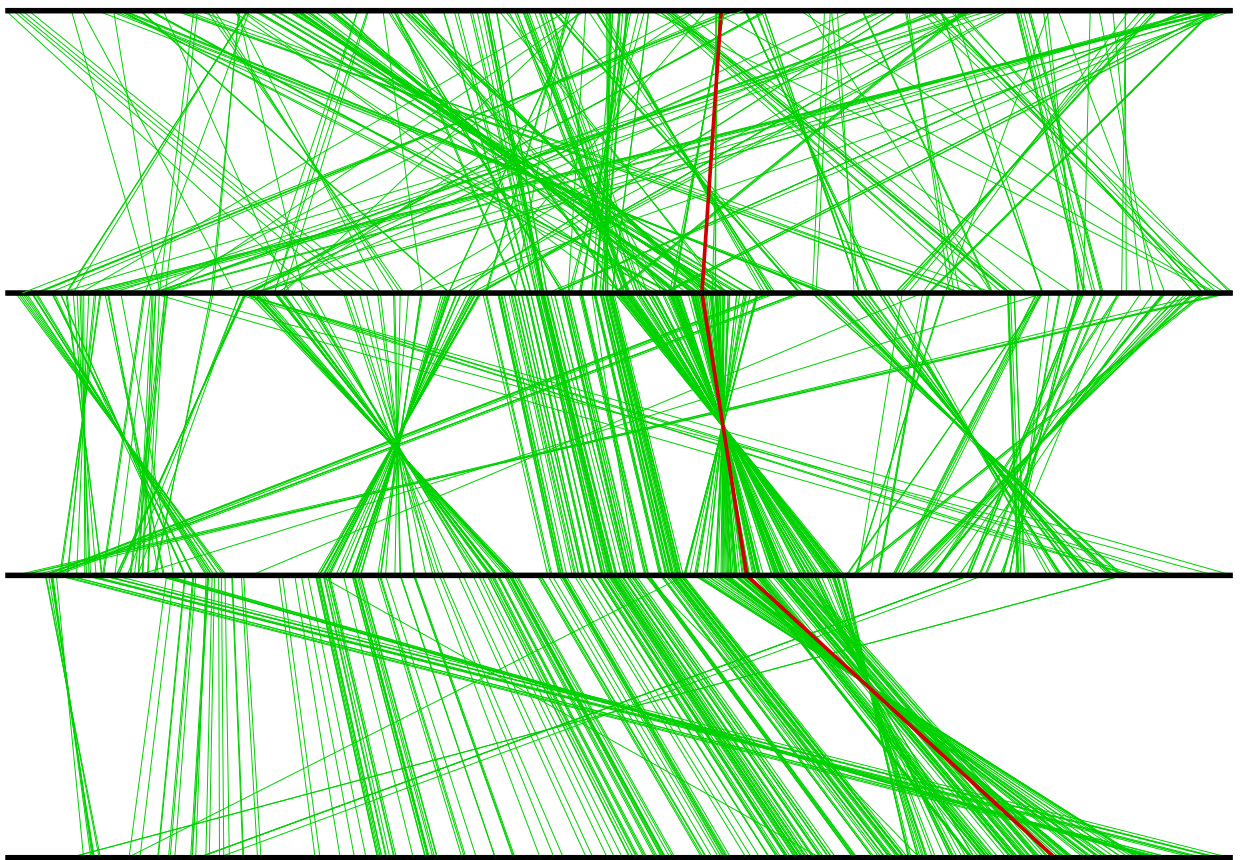
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Dr\_16

OI\_16

Ga\_20

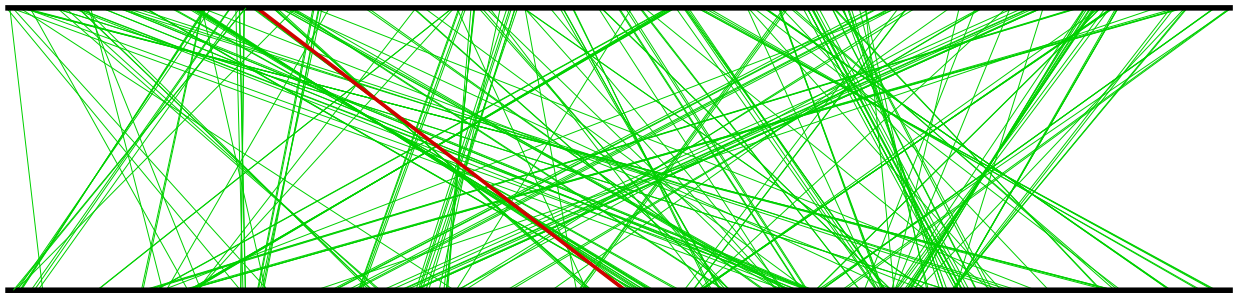
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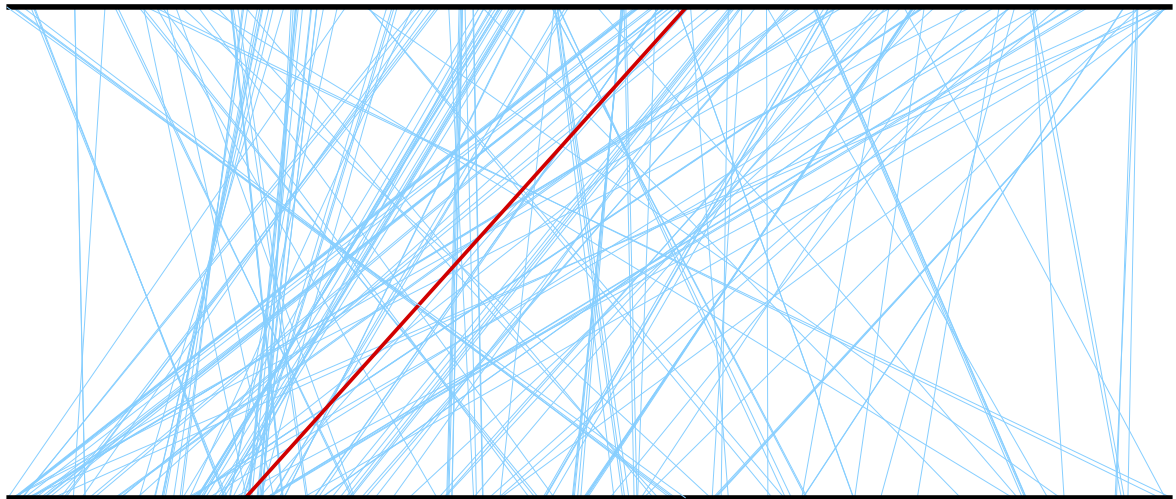
Dr\_19

Ol\_11



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**Dr\_16**



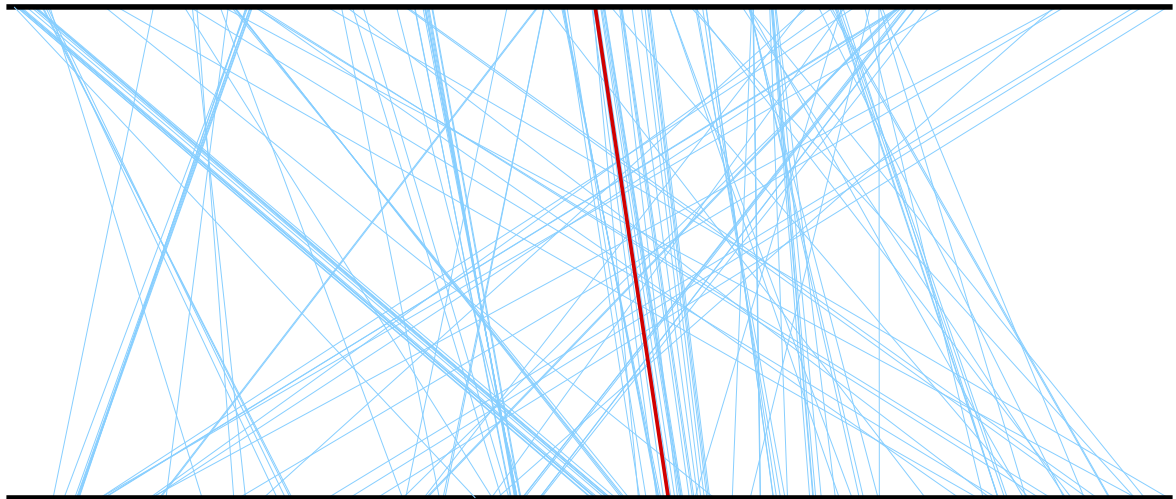
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**OI\_11**

**OI\_16**



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