

Step	Purchased measurements	Perturbation type	Perturbation target	Experimental technique	Arguments	Remaining credits
1	array_mod_2_wildtype_high.tab	Wildtype	-	Mass spectrometry	WT	9600
2	p8_p9_mod_2_wildtype.tab	Wildtype	-	Fluorescence microscopy	WT, High-Res	8600
3	p3_p4_mod_2_wildtype.tab	Wildtype	-	Fluorescence microscopy	WT, High-Res	8200
4	p5_p7_mod:2_wildtype.tab	Wildtype	-	Fluorescence microscopy	WT, High-Res	7800
5	p1_p2_mod_2_wildtype.tab	Wildtype	-	Fluorescence microscopy	WT, High-Res	7400
6	p10_p11_mod_2_wildtype.tab	Wildtype	-	Fluorescence microscopy	WT, High-Res, All	7000
7	array_mod_2_del_p7_high.tab	Deletion	p7	Mass spectrometry	Range, High-Res, All	5200
8	array_mod_2_over_p4_high.tab	Over-expression	p4	Mass spectrometry	Range, High-Res, All	3850
9	array_mod_2_over_p8_high.tab	Over-expression	p8	Mass spectrometry	Range, High-Res, All	2500
10	array_mod_2_over_p11_high.tab	Over-expression	p11	Mass spectrometry	Range, High-Res, All	1150
11	array_mod_2_dwn_p7_low.tab	Knockdown	p7	Mass spectrometry	Range, All, Budget	250

Table S1. Summary of the experimental design considerations of team crux for the network inference challenge. The second column denotes the chosen experimental conditions in the notation used during the challenge. The arguments underlying our decisions are denoted by abbreviations. Wild-type measurements provide data for quite less credits (argument “WT”). Such measurements have been chosen initially to obtain a setting with a reasonable set of identifiable parameters. Data with high resolution over time (argument „High-Res“) provides more detailed information about the dynamics and was therefore expected to be more efficient for distinguishing potentially missing links with similar qualitative effects. Using a measurement technique providing data for all compounds (argument „All“) is advantageous to obtain a comprehensive overview of the effect of a perturbation. The argument abbreviated by „Range“ indicates the fact that missing links are only identifiable, if the concentration range of the regulator is not far from the respective Michaelis constant k_D . Therefore, we performed perturbations affecting the concentration range of potential regulators in a desired direction. Finally, we had to account the remaining credits indicated by the argument „Budget“.