Table S1. Impact of different gene associations on pruning Prodoric and RegulonDB based graphs. Two weight discretizations were evaluated. After pruning most of the nodes were preserved while most of the edges were discarded. Nevertheless, most of the edges that were also in the reference graph were preserved. Percentages on parenthesis in the first three columns are respect to the initial not pruned putative graph. In all cases the probability of reaching the number of validated edges by random choosing was small, meaning that our results are significantly different to random selection. Average in-degree also was reduced in all cases, between 2.7 and 9.2 times, while precision and F-measure increased in all cases, showing that pruning discards mainly non validated edges. We evaluated precision only over the nodes which are used in the gold standard.

	Nodes	Edges	Edges in gold	Significance	In-degree	Precision	Recall	F-measure
Prodoric (3 cost levels)								
Not Pruned	2248 (—)	25329 (—)	395 (—)	—	11.0	8.2%	31.8%	13.0%
Correlation	1519 (68%)	5823 (23%)	200 (51%)	4.9E–34	2.5	16.0%	16.1%	16.0%
ARACNe	1886 (84%)	7211 (28%)	239 (61%)	2.8E–41	3.1	16.3%	19.3%	17.7%
C3NET	1318 (59%)	4225 (17%)	146 (37%)	4.2E–23	1.8	15.6%	11.8%	13.4%
CLR	2104 (94%)	8570 (34%)	283 (72%)	1.5E–54	3.7	16.7%	22.8%	19.3%
MRNET	2163 (96%)	8973 (35%)	293 (74%)	4.9E–57	3.9	16.7%	23.6%	19.6%
Prodoric (5 cost levels)								
Not Pruned	2248 (—)	25329 (—)	395 (—)	—	11	8.2%	31.8%	13.0%
Correlation	1519 (68%)	4090 (16%)	175 (44%)	4.7E–41	1.7	20.8%	14.1%	16.8%
ARACNe	1886 (84%)	5041 (20%)	214 (54%)	6.8E–53	2.2	21.8%	17.2%	19.2%
C3NET	1318 (59%)	2858 (11%)	132 (33%)	1.0E–32	1.2	21.4%	10.6%	14.2%
CLR	2104 (94%)	6168 (24%)	255 (65%)	7.4E–66	2.7	21.5%	20.5%	21.0%
MRNET	2163 (96%)	6493 (26%)	267 (68%)	2.5E–70	2.8	21.7%	21.5%	21.6%
RegulonDB (3 cost levels)								
Not Pruned	2224 (—)	12312 (—)	577 (—)	—	5.4	14.1%	46.5%	21.6%
Correlation	1482 (67%)	3067 (25%)	267 (46%)	1.1E–30	1.3	24.3%	21.5%	22.8%
ARACNe	1864 (84%)	3828 (31%)	334 (58%)	8.2E–43	1.6	25.6%	26.9%	26.2%
C3NET	1295 (58%)	2228 (18%)	199 (34%)	1.5E–22	0.9	24.5%	16.0%	19.4%
CLR	2076 (93%)	4511 (37%)	385 (67%)	1.5E–51	1.9	25.5%	31.0%	28.0%
MRNET	2140 (96%)	4744 (39%)	408 (71%)	1.6E–58	2	26.0%	32.9%	29.0%
RegulonDB (5 cost levels)								
Not Pruned	2224 (—)	12312 (—)	577 (—)	—	5.4	14.1%	46.5%	21.6%
Correlation	1482 (67%)	2429 (20%)	246 (43%)	1.2E–38	1.0	28.2%	19.8%	23.3%
ARACNe	1864 (84%)	3030 (25%)	298 (52%)	3.6E–47	1.3	29.4%	24.0%	26.4%
C3NET	1295 (58%)	1826 (15%)	187 (32%)	2.6E–28	0.8	28.1%	15.1%	19.6%
CLR	2076 (93%)	3624 (29%)	352 (61%)	4.2E–59	1.6	29.5%	28.4%	28.9%
MRNET	2140 (96%)	3808 (31%)	364 (63%)	2.1E–60	1.6	29.2%	29.3%	29.2%