

Supplementary Material

Table S1

ORF	Gene	Process	Predicted Localization	RELIE F rank	ANOVA rank	SAM score	CIIR gene	High dose 200Gy
YAL049C		unknown	Cytoplasm	190	495	2.49	ind	ind
YBR014C		unknown	ER-related	78	24	3.53	ind	ind
YBR039W	ATP3	ATP synthesis	Mitochondria	385	232	2.92	ind	ind
YBR162W-A	YSY6	secretion (putative)		366	463	2.92	ind	ind
YBR230C		unknown	Mitochondria	14	234	4.16	ind	ind
YBR268W	MRPL37	protein synthesis	Mitochondria	123	154	3.8	ind	ind
YCL046W		unknown	Cytoplasm	237	204	2.57	ind	ind
YDL004W	ATP16	ATP synthesis	Mitochondria	430	226	2.93	ind	ind
YDL181W	INH1	ATP synthesis	Cytoplasm	37	94	4.24	ind	ind
YDR298C	ATP5	ATP synthesis	Mitochondria	169	397	2.8	ind	ind
YDR322C-A	TIM11	ATP synthesis		194	225	3.84	ind	ind
YDR373W	FRQ1	unknown	Cytoplasm	91	16	4.44	ind	ind
YDR377W	ATP17	ATP synthesis	Mitochondria	56	54	4.43	ind	ind
YDR479C		unknown	Nucleus	221	71	3.32	ind	ind
YDR511W		unknown	Mitochondria	13	1	4.97	ind	ind
YDR513W	TTR1	electron carrier	ER-related	84	244	3.07	ind	ind
YDR529C	QCR7	respiration	Cytoplasm	22	341	3.75	ind	ind
YEL020C		unknown	Nucleus	230	178	2.96	ind	ind
YER019C-A	SBH2	secretion		120	323	3.07	ind	ind
YER072W	NRF1	signaling, polarized growth (putative)	Membrane-related	111	119	3.76	ind	ind
YER183C		unknown	Mitochondria	212	320	3.11	ind	ind
YFL030W		unknown	Cytoplasm	34	398	3.69	ind	ind
YFR029W	PTR3	transport	Nucleus	448	101	3.3	ind	ind
YGL087C	MMS2	DNA repair, postreplication	Cytoplasm	117	49	3.82	ind	ind
YGL187C	COX4	oxidative phosphorylation	Mitochondria	82	295	3.7	ind	ind
YGL188C		unknown	Mitochondria	21	151	4.43	ind	ind
YGL191W	COX13	oxidative phosphorylation	Mitochondria	43	179	3.85	ind	ind
YGR063C	SPT4	transcription	Cytoplasm	219	92	2.98	ind	ind
YGR076C	MRPL25	protein synthesis	Cytoplasm	247	64	3.55	ind	ind
YGR137W		unknown	Membrane-related	96	140	3.05	ind	ind
YGR234W	YHB1	oxidative stress response (putative)	Cytoplasm	5	10	5.37	ind	ind
YHR001W-A	QCR10	oxidative phosphorylation		18	15	5.18	ind	ind

YHR051W	COX6	oxidative phosphorylation	Mitochondria	101	299	3.61	ind	ind
YHR053C	CUP1-1	Cu2+ ion homeostasis	Cytoplasm	53	152	3.29	ind	ind
YHR055C	CUP1-2	Cu2+ ion homeostasis	Cytoplasm	89	200	2.75	ind	ind
YHR056C		unknown	Nucleus	493	156	2.92	ind	ind
YHR138C		unknown	ER-related	201	378	2.87	ind	ind
YJR077C	MIR1	transport	Mitochondria	49	300	3.78	ind	ind
YJR095W	SFC1	transport	Nucleus	2	59	4.15	ind	ind
YJR104C	SOD1	oxidative stress response	Cytoplasm	127	8	5.09	ind	ind
YKL016C	ATP7	ATP synthesis	Cytoplasm	172	13	4.02	ind	ind
YKL150W	MCR1	electron carrier	ER-related	104	465	2.77	ind	ind
YKL170W	MRPL38	protein synthesis	Mitochondria	481	455	2.54	ind	ind
YLR038C	COX12	oxidative phosphorylation	Cytoplasm	8	74	4.92	ind	ind
YML081C-A	ATP18	ATP synthesis (putative)		38	4	4.36	ind	ind
YML090W		unknown	ER-related	149	377	3.42	ind	ind
YMR158W		unknown	Mitochondria	182	57	3.26	ind	ind
YMR242C	RPL20A	protein synthesis	Cytoplasm	81	476	2.85	ind	ind
YMR256C	COX7	oxidative phosphorylation	Mitochondria	20	247	3.44	ind	ind
YNL052W	COX5A	oxidative phosphorylation	Mitochondria	54	307	4.12	ind	ind
YNL147W	LSM7	mRNA splicing (putative)	Mitochondria	273	248	2.85	ind	ind
YNR032C-A		unknown		125	75	3.22	ind	ind
YOL077W-A	ATP19	ATP synthesis		17	5	4.99	ind	ind
YOL143C	RIB4	riboflavin biosynthesis	Cytoplasm	114	159	3.19	ind	ind
YOL159C		unknown	ER-related	223	45	3.33	ind	ind
YOR065W	CYT1	oxidative phosphorylation	Mitochondria	378	362	3.41	ind	ind
YPL183W-A		protein synthesis		492	440	2.68	ind	ind
YPL261C		unknown	ER-related	73	25	3.89	ind	ind
YPL271W	ATP15	ATP synthesis	Mitochondria	12	17	5.13	ind	ind
YPR020W	ATP20	ATP synthesis	Cytoplasm	35	52	4.89	ind	ind
YPR058W	YMC1	transport	Mitochondria	320	412	2.32	ind	ind
YPR094W		unknown	Mitochondria	162	30	3.88	ind	ind
YPR146C		unknown	Membrane-related	68	106	3.35	ind	ind
YPR151C		unknown	Cytoplasm	121	473	3.3	ind	ind
YBL026W	LSM2	mRNA splicing	Mitochondria	467	86	3.76	ind	no
YBL050W	SEC17	secretion	Nucleus	469	288	2.87	ind	no
YBR047W		unknown	Cytoplasm	30	23	4.25	ind	no
YBR050C	REG2	glucose repression	Nucleus	16	77	3.99	ind	no
YBR077C		unknown	Cytoplasm	354	66	3.49	ind	no
YBR089C-A	NHP6B	chromatin structure		257	273	2.97	ind	no
YBR262C		unknown	Mitochondria	152	308	3	ind	no

YCL025C	AGP1	transport	Membrane-related	386	386	3.01	ind	no
YCR097W	A1	transcription		131	89	3.66	ind	no
YDL120W	YFH1	iron homeostasis, mitochondrial	Mitochondria	446	116	3.22	ind	no
YDL200C	MGT1	DNA repair	Mitochondria	228	202	3.07	ind	no
YDL215C	GDH2	glutamate metabolism	Nucleus	483	395	2.75	ind	no
YDR031W		unknown	Cytoplasm	375	185	2.93	ind	no
YDR115W		unknown	Cytoplasm	215	215	2.93	ind	no
YDR218C	SPR28	sporulation	Cytoplasm	199	26	3.6	ind	no
YDR231C	COX20	respiration	Mitochondria	64	21	4.42	ind	no
YDR264C	AKR1	"signaling, pheromone pathway; endocytosis; cell shape control"	Membrane-related	488	434	2.77	ind	no
YDR378C	LSM6	mRNA splicing (putative)	Mitochondria	409	391	2.53	ind	no
YEL006W		unknown	Mitochondria	258	38	3.45	ind	no
YER010C		unknown	Nucleus	382	162	3.15	ind	no
YER042W	MXR1	oxidative stress response	Cytoplasm	40	467	2.76	ind	no
YER071C		unknown	Nucleus	179	48	3.8	ind	no
YER092W		unknown	Cytoplasm	396	85	3.32	ind	no
YER152C		unknown	Nucleus	372	303	2.23	ind	no
YER174C	GRX4	oxidative stress response	Cytoplasm	63	18	4.2	ind	no
YFR011C		unknown	Cytoplasm	359	411	3.12	ind	no
YGL010W		unknown	Mitochondria	156	47	3.79	ind	no
YGL033W	HOP2	meiosis, chromosome pairing (putative)	Cytoplasm	477	96	2.68	ind	no
YGL056C	SDS23	unknown	Mitochondria	340	484	3.01	ind	no
YGL136C		unknown	Nucleus	435	79	3.24	ind	no
YGL154C	LYS5	lysine biosynthesis	Nucleus	102	181	3.18	ind	no
YGL220W		unknown	Mitochondria	250	268	2.86	ind	no
YGL249W	ZIP2	meiosis, synapsis	Nucleus	373	188	2.82	ind	no
YGR133W	PEX4	protein degradation, ubiquitin-mediated	Cytoplasm	352	109	2.79	ind	no
YGR220C	MRPL9	protein synthesis	Mitochondria	155	50	3.75	ind	no
YGR235C		unknown	Mitochondria	39	39	4.11	ind	no
YHL043W	ECM34	cell wall biogenesis	Membrane-related	452	171	2.96	ind	no
YHR058C	MED6	transcription	Nucleus	305	127	2.9	ind	no
YHR110W	ERP5	"membrane trafficking; secretion (putative)"	ER-related	92	7	4.57	ind	no

YHR121W		unknown	Mitochondria	175	28	3.75	ind	no
YHR132C	ECM14	cell wall biogenesis	ER-related	420	147	2.57	ind	no
YHR136C	SPL2	cell cycle	Cytoplasm	44	3	4.42	ind	no
YIL057C		unknown	Cytoplasm	75	393	3.52	ind	no
YIL098C	FMC1	respiration (putative)	Mitochondria	342	104	3.51	ind	no
YIL112W		unknown	Nucleus	206	183	3.32	ind	no
YIR017C	MET28	sulfur amino acid metabolism	Cytoplasm	137	186	3.17	ind	no
YIR029W	DAL2	allantoin utilization	Cytoplasm	67	143	3.99	ind	no
YJL037W		unknown	Membrane-related	450	84	3.02	ind	no
YJL102W	MEF2	protein synthesis	Mitochondria	308	357	2.58	ind	no
YJL205C-A	NCE101	secretion, non-classical		245	306	2.86	ind	no
YJR078W		unknown	Nucleus	174	122	2.94	ind	no
YKL002W		unknown	Cytoplasm	252	135	3.33	ind	no
YKL058W	TOA2	transcription	Cytoplasm	318	118	3.33	ind	no
YKL067W	YNK1	nucleotide metabolism	Cytoplasm	42	139	3.48	ind	no
YKR088C		unknown	Membrane-related	278	157	2.93	ind	no
YLR041W		unknown	Mitochondria	433	444	3.16	ind	no
YLR174W	IDP2	TCA cycle	Cytoplasm	62	490	3.5	ind	no
YLR236C		unknown		188	70	3.57	ind	no
YLR262C-A		unknown		146	446	2.57	ind	no
YLR267W	BOP2	unknown	Nucleus	417	482	2.42	ind	no
YLR337C	VRP1	cytoskeleton		351	37	2.4	ind	no
YLR375W	STP3	tRNA splicing	Nucleus	427	325	3.15	ind	no
YLR377C	FBP1	gluconeogenesis	Cytoplasm	1	91	5.58	ind	no
YLR385C		unknown	ER-related	324	217	2.82	ind	no
YLR395C	COX8	oxidative phosphorylation	Mitochondria	61	76	3.97	ind	no
YML114C		unknown	Nucleus	281	124	3.31	ind	no
YMR022W	QRI8	protein degradation, ubiquitin-mediated	Cytoplasm	128	27	4.2	ind	no
YMR035W	IMP2	protein processing	Mitochondria	31	2	5.02	ind	no
YMR056C	AAC1	transport	Mitochondria	86	206	3.66	ind	no
YMR126C		unknown	Membrane-related	292	113	3.08	ind	no
YMR157C		unknown	Mitochondria	140	33	3.88	ind	no
YMR264W	CUE1	protein degradation, ubiquitin-mediated	ER-related	109	19	4.16	ind	no
YMR281W	GPI12	protein processing (putative)	ER-related	332	65	3.33	ind	no
YNL133C		unknown	Cytoplasm	97	41	3.89	ind	no
YNL285W		unknown	Cytoplasm	414	275	2.69	ind	no

YNR002C	FUN34	unknown	Membrane-related	100	452	3.42	ind	no
YOL053W		unknown	Mitochondria	353	56	3.08	ind	no
YOL081W	IRA2	signaling, Ras pathway	Nucleus	99	409	3.02	ind	no
YOL099C		unknown	Membrane-related	404	240	3	ind	no
YOL111C		unknown	Mitochondria	337	88	3.31	ind	no
YOL129W		unknown	Membrane-related	254	375	2.66	ind	no
YOR064C		unknown	Nucleus	55	43	4.19	ind	no
YOR100C	CRC1	transport	Cytoplasm	428	197	3.32	ind	no
YOR169C		unknown	Nucleus	271	150	3.11	ind	no
YOR170W		unknown	Mitochondria	153	175	3.17	ind	no
YOR196C	LIP5	fatty acid metabolism	Mitochondria	238	73	3.54	ind	no
YOR286W		unknown	Cytoplasm	285	218	2.83	ind	no
YPL147W	PXA1	transport	Nucleus	211	457	2.19	ind	no
YPL156C		unknown	Membrane-related	83	12	4.1	ind	no
YPL200W		unknown	ER-related	405	128	3.47	ind	no
YPL201C		unknown	Cytoplasm	3	32	4.7	ind	no
YPL275W		unknown	Mitochondria	15	399	1.29	ind	no
YPR082C	DIB1	unknown	Cytoplasm	110	87	4.09	ind	no
YPR098C		unknown	Mitochondria	425	195	2.86	ind	no
YPR099C		unknown	ER-related	144	20	4.05	ind	no
YPR193C	HPA2	chromatin structure	Cytoplasm	132	447	3.35	ind	no
YAL064W-B		unknown		475	172	-2.79	rep	no
YBL069W	AST1	plasma membrane protein targeting	Nucleus	184	11	-3.27	rep	no
YBR042C		unknown	ER-related	148	14	-3.54	rep	no
YBR060C	ORC2	DNA replication	Nucleus	406	333	-2.37	rep	no
YCR049C		unknown	Nucleus	436	219	-2.49	rep	no
YDL028C	MPS1	mitosis, checkpoint	Nucleus	243	100	-2.76	rep	no
YDL071C		unknown	ER-related	207	213	-2.57	rep	no
YDL187C		unknown	Cytoplasm	25	42	-3.29	rep	no
YDL246C		unknown	Cytoplasm	171	481	-2.13	rep	no
YDL247W		unknown	Membrane-related	133	260	-2.47	rep	no
YDR021W	FAL1	rRNA processing	Nucleus	95	170	-2.57	rep	no
YDR052C	DBF4	cell cycle	Nucleus	189	448	-2.37	rep	no
YDR221W		unknown	ER-related	288	130	-2.6	rep	no
YDR257C	RMS1	transcription	Nucleus	347	294	-2.24	rep	no
YDR277C	MTH1	hexose transport	Nucleus	47	123	-2.7	rep	no
YDR331W	GPI8	protein processing	ER-related	309	477	-2.22	rep	no
YDR379W	RGA2	signaling	Nucleus	439	351	-2.41	rep	no
YDR383C		unknown	Nucleus	136	34	-3.32	rep	no
YEL047C		unknown	ER-related	197	407	-2.21	rep	no
YER022W	SRB4	transcription	Nucleus	186	98	-2.55	rep	no
YER027C	GAL83	glucose repression	Nucleus	260	340	-2.19	rep	no

YER049W		unknown	Cytoplasm	24	492	-2.63	rep	no
YER187W-A	KHS1	unknown		151	310	-2.4	rep	no
YFL047W		unknown	Nucleus	248	315	-2.12	rep	no
YFL048C	EMP47	secretion	ER-related	494	83	-2.34	rep	no
YFR012W		unknown	Membrane-related	391	279	-2.45	rep	no
YFR039C		unknown	ER-related	434	257	-2.56	rep	no
YGL017W	ATE1	protein synthesis	Nucleus	402	313	-2.27	rep	no
YGL032C	AGA2	mating	ER-related	225	134	-2.8	rep	no
YGL144C		unknown	Nucleus	139	168	-2.52	rep	no
YGL225W	GOG5	protein glycosylation	Membrane-related	456	169	-2.53	rep	no
YGL228W	SHE10	unknown	ER-related	113	405	-2.41	rep	no
YGL263W	COS12	unknown	ER-related	422	192	-2.32	rep	no
YGR014W	MSB2	bud emergence	ER-related	246	253	-2.48	rep	no
YGR208W	SER2	glycine, serine, and threonine metabolism	Cytoplasm	51	31	-3.29	rep	no
YGR294W		unknown	ER-related	231	494	-2.34	rep	no
YHR047C	AAP1'	protein degradation	Nucleus	226	439	-2.32	rep	no
YHR073W		unknown	Nucleus	441	103	-2.63	rep	no
YHR085W		unknown	Nucleus	253	274	-2.56	rep	no
YIL006W		unknown	Nucleus	363	389	-2.47	rep	no
YIL055C		unknown	Membrane-related	295	141	-2.57	rep	no
YIL174W		unknown	Mitochondria	36	6	-3.99	rep	no
YIR010W		unknown	Nucleus	284	164	-2.65	rep	no
YJL025W	RRN7	transcription	Nucleus	167	51	-3.01	rep	no
YJL041W	NSP1	nuclear protein targeting	Nucleus	158	261	-2.25	rep	no
YJL051W		unknown	Membrane-related	77	296	-2.62	rep	no
YJL105W		unknown	Nucleus	224	246	-2.46	rep	no
YJL110C	GZF3	nitrogen catabolism	Nucleus	445	435	-2.36	rep	no
YJL145W		unknown	Mitochondria	183	58	-3.18	rep	no
YJR003C		unknown	Cytoplasm	208	284	-2.19	rep	no
YJR064W	CCT5	protein targeting	Cytoplasm	423	441	-2.12	rep	no
YJR069C	HAM1	6-N-hydroxylaminopyridine resistance	Cytoplasm	412	40	-3.02	rep	no
YKL008C	LAC1	aging	Membrane-related	341	80	-2.65	rep	no
YKL062W	MSN4	transcription	Nucleus	418	321	-2.14	rep	no
YKL112W	ABF1	transcription	Nucleus	275	243	-2.47	rep	no
YKL144C	RPC25	transcription	Nucleus	209	22	-3.34	rep	no
YKL205W	LOS1	tRNA splicing	Nucleus	355	464	-2.26	rep	no
YKL223W		unknown	Mitochondria	307	271	-2.56	rep	no
YKL224C		unknown	ER-related	256	424	-2.38	rep	no
YKR027W		unknown	Nucleus	164	182	-2.74	rep	no
YKR043C		unknown	Cytoplasm	491	67	-2.93	rep	no
YLR042C		unknown	Membrane-related	80	229	-2.75	rep	no

YLR084C	RAX2	cell polarity (putative)	Membrane-related	376	293	-2.42	rep	no
YLR432W		unknown	Cytoplasm	45	137	-2.68	rep	no
YLR464W		unknown	Nucleus	267	278	-2.59	rep	no
YML062C	MFT1	mitochondrial protein targeting	Nucleus	299	61	-2.89	rep	no
YML064C	TEM1	cell cycle	Nucleus	287	191	-2.58	rep	no
YML128C		unknown	ER-related	59	385	-2.34	rep	no
YMR151W	YIM2	unknown	Membrane-related	476	221	-2.71	rep	no
YMR307W	GAS1	unknown	ER-related	269	107	-2.68	rep	no
YNL065W		unknown	Membrane-related	33	238	-2.77	rep	no
YOL064C	MET22	methionine biosynthesis	Cytoplasm	447	239	-2.02	rep	no
YOL156W	HXT11	transport	Membrane-related	57	72	-3.27	rep	no
YOL164W		unknown	Nucleus	72	311	-2.42	rep	no
YOR047C	STD1	glucose repression	Mitochondria	487	198	-2.41	rep	no
YOR051C		unknown	Nucleus	4	62	-3.6	rep	no
YPL021W	ECM23	cell wall biogenesis (putative)	Cytoplasm	319	292	-2.44	rep	no
YPL023C	MET12	methionine biosynthesis	Nucleus	142	167	-2.66	rep	no
YPL245W		unknown	Nucleus	124	111	-2.61	rep	no
YPR076W		unknown	Cytoplasm	322	414	-1.99	rep	no
YPR136C		unknown	Membrane-related	239	417	-2.19	rep	no
YAL035W	FUN12	unknown	Cytoplasm	93	302	-2.67	rep	rep
YAL053W		unknown	Membrane-related	65	99	-2.72	rep	rep
YAR073W		unknown	Cytoplasm	165	304	-2.36	rep	rep
YBL039C	URA7	pyrimidine biosynthesis	Cytoplasm	88	173	-2.55	rep	rep
YBR121C	GRS1	protein synthesis	Cytoplasm	296	339	-2.31	rep	rep
YDR037W	KRS1	protein synthesis	Cytoplasm	293	97	-2.86	rep	rep
YDR091C		unknown	Nucleus	390	35	-3.18	rep	rep
YDR234W	LYS4	lysine biosynthesis	Cytoplasm	115	55	-2.88	rep	rep
YDR398W		unknown	Cytoplasm	298	371	-2.52	rep	rep
YEL075C		unknown	Nucleus	138	451	-2.42	rep	rep
YEL076C-A		unknown		261	265	-1.85	rep	rep
YEL076W-C		unknown		9	429	-2.47	rep	rep
YER011W	TIR1	stress response (putative)	ER-related	23	355	-2.4	rep	rep
YFR009W	GCN20	protein synthesis	Cytoplasm	380	69	-2.66	rep	rep
YGL120C	PRP43	mRNA splicing	Cytoplasm	262	408	-2.3	rep	rep
YHL046C		unknown	ER-related	191	425	-2.51	rep	rep
YHL049C		unknown	ER-related	85	233	-2.95	rep	rep
YHR070W		unknown	Nucleus	392	438	-2.18	rep	rep

YHR092C	HXT4	transport	Membrane-related	315	330	-2.65	rep	rep
YHR137W	ARO9	aromatic amino acid metabolism	Nucleus	90	82	-3	rep	rep
YIL176C		unknown	ER-related	181	469	-2.41	rep	rep
YJL080C	SCP160	mitosis, chromosome transmission	Cytoplasm	170	9	-3.57	rep	rep
YJL200C		unknown	Mitochondria	313	145	-2.57	rep	rep
YJR162C		unknown	Mitochondria	27	254	-2.6	rep	rep
YKL029C	MAE1	pyruvate metabolism	Mitochondria	41	190	-2.61	rep	rep
YLL011W	SOF1	rRNA processing	Nucleus	300	207	-2.34	rep	rep
YLL048C	YBT1	transport	Membrane-related	69	331	-2.29	rep	rep
YLR060W	FRS1	protein synthesis	Cytoplasm	116	44	-3.09	rep	rep
YLR462W		unknown	Nucleus	6	163	-3.07	rep	rep
YOL057W		unknown	Cytoplasm	216	277	-2.21	rep	rep
YOL079W		unknown	Membrane-related	154	459	-2.32	rep	rep
YOR168W	GLN4	protein synthesis	Nucleus	335	102	-2.61	rep	rep
YOR394W		unknown	Membrane-related	187	142	-3.15	rep	rep
YPL044C		unknown	Nucleus	107	78	-2.78	rep	rep
YPL086C	ELP3	chromatin structure	Mitochondria	346	298	-2.35	rep	rep
YPL093W	NOG1	unknown	Cytoplasm	276	496	-2.18	rep	rep
YPR203W		unknown	ER-related	26	235	-2.96	rep	rep

Table S1. List of the CIIR genes. The name of the gene and the function and localisation of the protein are indicated in the first columns. The classification parameter given by each analytical method are indicated. In the two last columns we summerized our results on populations exposed to continuous low rate irradiation (CIIR gene) or to acute irradiation (High dose 200 Gy): rep :repressed ; ind : induced ; no : no variation).

Figure S1

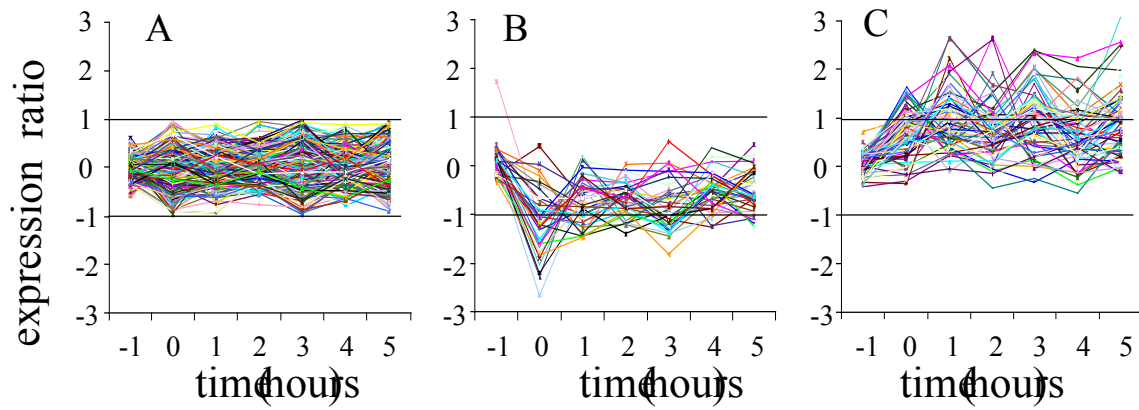


Figure S1: Kinetics of expression of CIIR genes exposed to a 200Gy acute irradiation. Panel A: genes not affected by acute irradiation; Panel B: repressed genes; Panel C: induced genes. The lists of the genes are given in Table S1.