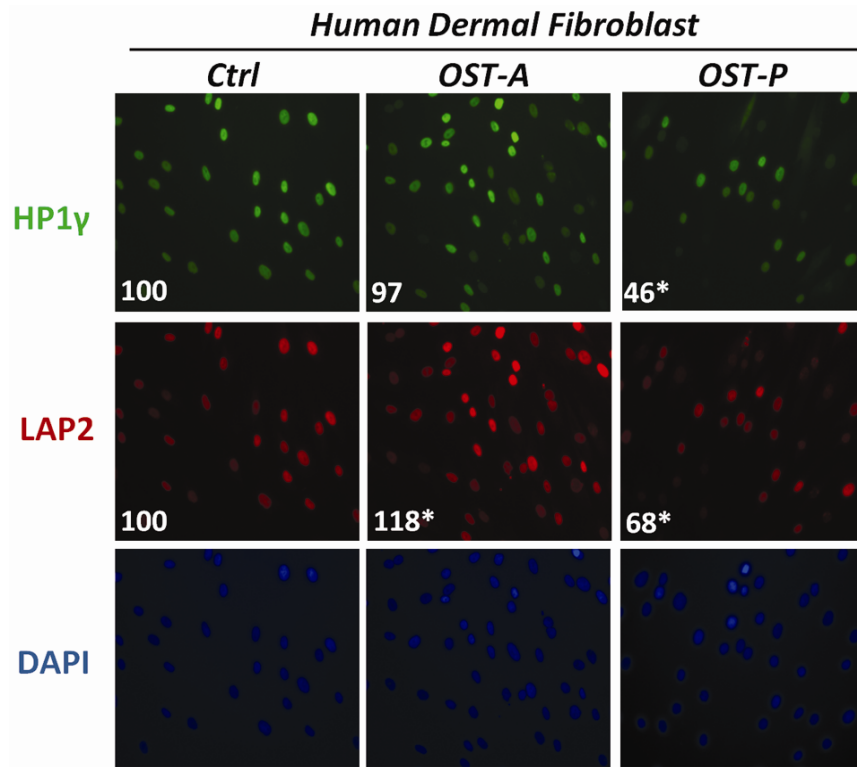
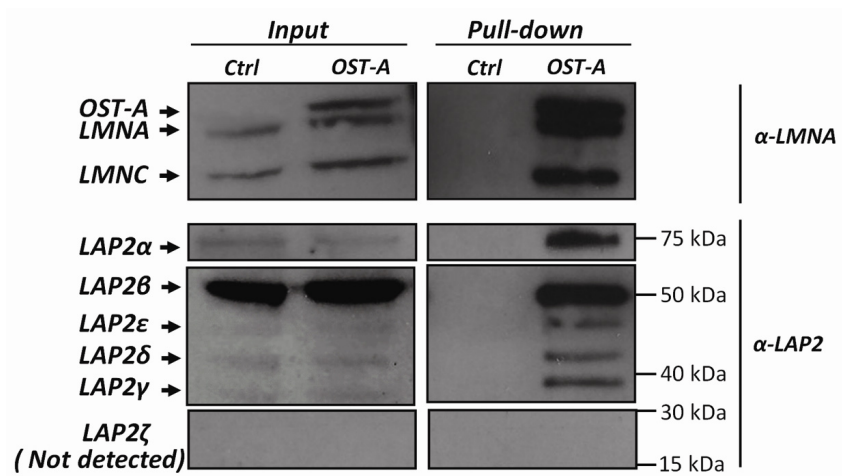


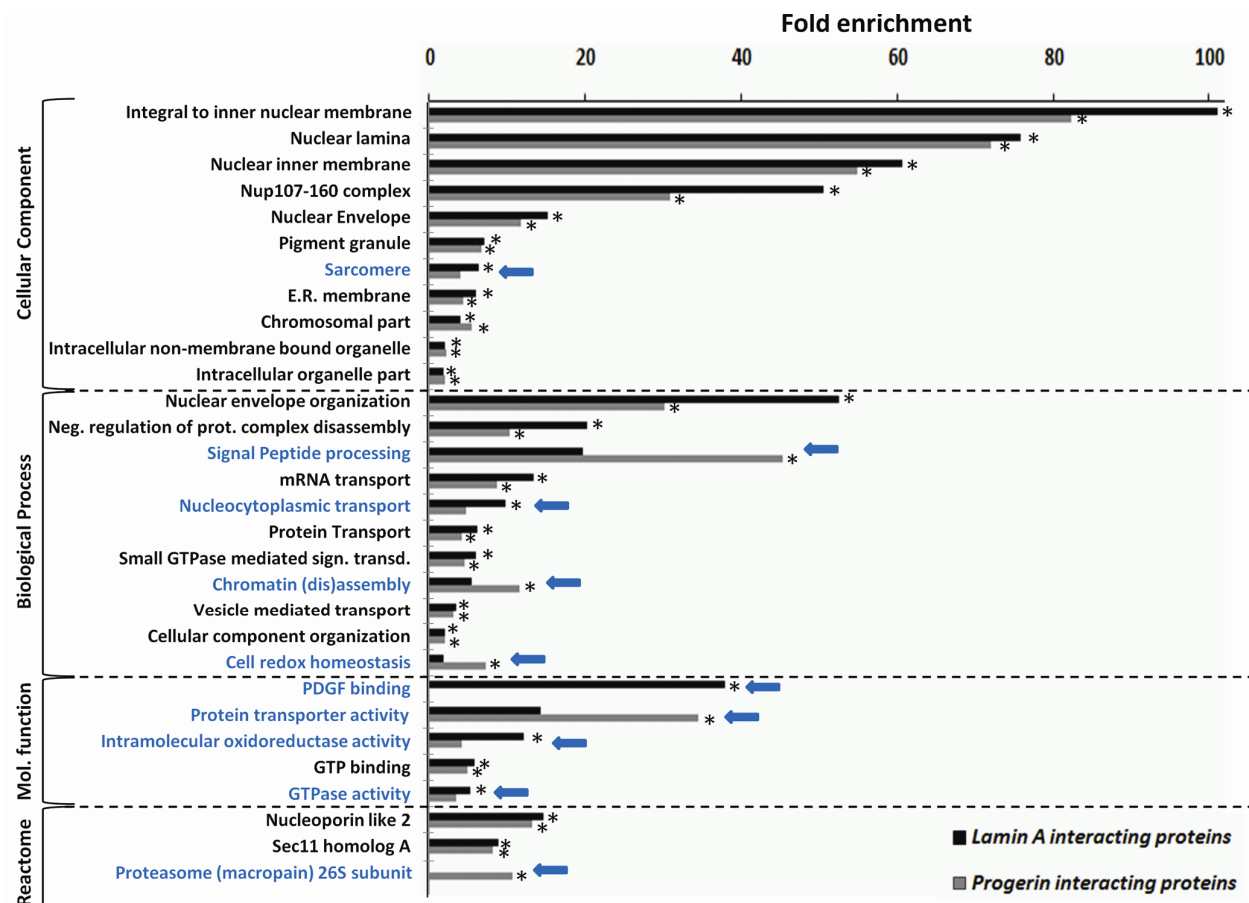
**Figure S1. Schematic overview of OneSTrEP-tagged lamin constructs.** Lamin A, C and progerin were tagged at their N-terminus by a OneSTrEP-tag, consisting of two Strep-tag II epitopes (underlined), which interact with high affinity to Streptactin matrix, separated by a serine and alanine linker region. The chemical structure of a Strep-tag II epitope is further depicted. Mature OneSTrEP-tagged lamin A (OST-A) is released after farnesylation of the C-terminal Caax-motif, cleavage of the -aax amino acids and subsequent carboxymethylation of the C-terminus, followed by an upstream cleavage by Zmpste24 in mice cells (indicated by scissor; Face-1 for human cell lines). Due to a loss of 50 amino acids (indicated as  $\Delta 50$  aa.), including the Zmpste24 restriction site, OneSTrEP-tagged progerin (OST-P) is only processed by farnesylation of the C-terminal Caax-motif, subsequent cleavage of the -aax amino acids and carboxymethylation of the C-terminus, and cannot be further cleaved by Zmpste24. OneSTrEP-tagged lamin C (OST-C), contains a Lamin C-specific terminus, as well as the A-type lamins common coiled-coil rod domain and nuclear localization signal (NLS).



**Figure S2. Progerin dependent loss of HP1 $\gamma$  and LAP2 protein.** Fluorescent detection of HP1 $\gamma$ , LAP2 and DNA (DAPI) in human dermal fibroblasts (HDF) expressing an empty vector, OST-A or OST-P at endogenous lamin A levels. The nuclear intensity of total LAP2 (all isoforms included) and HP1 $\gamma$  was determined as described in the Material and Methods, and average expression values are depicted in numbers. Distribution curves were tested to be different or comparable using a Kolmogorov-Smirnov statistical test. An asterisk indicates a significant ( $p < 0.01$ ) difference between HDFs expressing OST-A or OST-P in comparison to empty vector (Ctrl) infected HDFs. The following antibodies were used:  $\alpha$ -HP1 $\gamma$ , mab3450, Chemicon, Temecula, USA ;  $\alpha$ -LAP2, kind gift from K. Wilson, raised against residues 1-187 of human LAP2, and suitable for detection of all LAP2 isoforms).



**Figure S3. Interactions between Lamin A and LAP2 isoforms.** Western blot of a OneSTrEP pull-down performed on U2OS cells infected with OST-A and control virus. Input and pull-down fractions were immunoblotted with  $\alpha$ -LaminA/C (Sc6215, Goat, Santa Cruz; detects endogenous Lamin A and C as well as OST-A) and  $\alpha$ -LAP2 (Y-20, Sc19783, Goat, Santa Cruz; suitable for LAP2 $\alpha$ , $\beta$ , $\gamma$ , $\delta$ , $\epsilon$  and  $\zeta$  detection). With the exception of LAP2 $\zeta$ , which could not be detected, all other isoforms were immunoblotted at their respective molecular weights.



**Figure S4. GO analysis of lamin A and progerin interacting proteins identified in MEFs.**

Identified lamin A and progerin interacting proteins were analyzed separately for the GO categories “cellular components” (CC), “biological process” (BP), “molecular function” (MF), as well as the reactome (R) database. Significant categories were determined by standard statistical algorithms incorporated into the DAVID database (see Material & Methods) and are indicated by asterisks ( $p < 1 \times 10^{-3}$ ; random proteins used as background). Categories enriched for by either OST-A or OST-P are indicated by arrows.

**Table S1. Mass spectrometry data for identified lamin A interacting proteins in NkITAg cells.**

Mascot scores for identified lamin A interacting proteins in NkITAg cells are listed. Furthermore it is indicated whether identified lamin A interactors were identified in two previous NE proteome studies (see grey shaded column) which had identified proteins in an INM/lumen/ONM<sup>6</sup> fraction or an INM/lamina/nucleoplasmic fraction<sup>10</sup>. Hashes indicate proteins GO-annotated as 'Extracellular region'.

GI code	Entrez M.M.	Name	NkITAg Ctrl	NkITAg OST-A	NkITAg OST-A	Previously identified in NE?
74219697	16905	Lmna	75	3534	3230	Yes <sup>6,10</sup>
52869	16906	Lmnb1		2272	2122	Yes <sup>6,10</sup>
27503473	16907	Lmnb2		1230	1296	Yes <sup>6,10</sup>
74202572	21917	LAP2β		1154	1152	Yes <sup>6,10</sup>
9845253	56258	Hnrph2		379	370	Yes <sup>10</sup>
9790069	53817	Bat1a		350		Yes <sup>10</sup>
28192672	98386	Lbr		342	378	Yes <sup>6,10</sup>
103484305	208263	Tor1aip1		327	118	Yes <sup>10</sup>
114612484	628648	HP1g		302	185	Yes <sup>10</sup>
50953786	223697	Unc84b/SUN2		302	166	Yes <sup>10</sup>
12852531	77053	Unc84a/SUN1		241	104	Yes <sup>6,10</sup>
20379977	232989	Hnrpul1	63	234		Yes <sup>10</sup>
74180977	17886	Myh9		220	39	Yes <sup>6,10</sup>
3065929	22628	Ywhag		198	204	Yes <sup>10</sup>
12832758	100046125	RAB5A		179		Yes <sup>10</sup>
6679641	13726	Emd		174	211	Yes <sup>6,10</sup>
554262	26900	Ddx3y		172	119	Yes <sup>10</sup>
21704124	433739	RBM10		168		Yes <sup>10</sup>
7106546	383901	Mme1		163		Yes <sup>10</sup>
1389682	16480	Jup <sup>#</sup>		147		Yes <sup>10</sup>
77812697	22138	Ttn		136		Yes <sup>10</sup>
6919955	24010	Ik		136	68	Yes <sup>10</sup>
4507785	100043681	UBC9		132		Yes <sup>10</sup>
21312784	100047806	PPIL1	32	127		Yes <sup>10</sup>
267150	21973	Top2a		123		Yes <sup>10</sup>
10946940	59021	Rab2		117	172	Yes <sup>10</sup>
6755863	22027	Hsp90b1		113		Yes <sup>10</sup>
145864461	380664	Lemd3		113	89	Yes <sup>6,10</sup>
26325884	624311	IPO2		111		Yes <sup>10</sup>
145699091	319565	Syne2		95	106	Yes <sup>10</sup>
148670589	19345	Rab5c			313	Yes <sup>10</sup>
4501887	667260	actG		677		No
34147513	19349	Rab7	93	387	297	No
13430890	50709	Hist1h1e		244	226	No
5902786	100045085	ANX3		242	81	No
9055370	54709	Eif3i		232	44	No
109735018	239673	4732456N10Rik		226		No
7710086	19325	Rab10		220	219	No
51092301	406223	EG406223		196		No
12857003	66978	Luc7l		192		No
6671694	12419	Cbx5	47	179	129	No
12229677	11867	Arpc1b		178		No
30424655	270192	Rab6b		178		No
21703344	20224	Sar1a		172	179	No
109081395	22003	Tpm1		162		No
9790159	56305	Pitpnb		158		No
1621617	21849	Trim28	75	153	298	No
12845035	675981	eif2a		148		No
6755448	20333	Sec22b		143	62	No
12836024	66870	Serbp1		129		No
4063383	20901	Strap	33	118		No
45544618	66902	Mtap		117		No
27369836	217980	Larp5		115		No
21312564	218501	cnn3		106		No
149272300	100039086	Gm15032		105		No
6755204	19173	Psmb5		105	101	No
21595163	234407	Glt25d1		104		No
12846304	13885	Esd		104		No
198637	14375	Ku70	33	100		No
124486993	433923	EG433923			131	No

**Table S2. GO analysis for identified lamin A (NkITag) and preferential lamin A/progerin (MEF) interactors.** Identified lamin A interacting proteins in NkITag cells and preferential lamin A/progerin interactors in MEFs, were analyzed separately for the GO categories “cellular components” (GO-CC), “biological process” (GO-BP), “molecular function” (GO-MF), as well as the Reactome (R) database. Categories are listed, together with the amount of proteins represented in the category compared to the total amount of annotated proteins. Enrichment factors are determined in comparison to random protein sets as well as NE proteins<sup>6,10</sup>, and p-values are indicated ( $p < 1 \times 10^{-3}$  indicated in bold) based on statistical algorithms incorporated into the DAVID database.<sup>22,23-71</sup>

Protein Set	Database	Database Category	Protein in category/ Total annotated Proteins	Enrichment Factor vs. Random Protein Background	P-Value	Enrichment Factor vs. NE Protein Background	P-value
NKLTAG	GO-CC	GO:0005635~nuclear envelope	12 52	21.5	<b>5.0E-12</b>	6.3	<b>1.0E-07</b>
NKLTAG	GO-CC	GO:0048770~pigment granule	6 52	19.3	<b>1.3E-05</b>	6.2	2.2E-02
NKLTAG	GO-CC	GO:0015629~actin cytoskeleton	6 52	8.0	<b>8.1E-04</b>	2.8	2.8E-01
NKLTAG	GO-CC	GO:0005694~chromosome	6 52	4.3	<b>9.7E-03</b>	2.0	2.3E-01
NKLTAG	GO-BP	GO:0006998~nuclear envelope	3 39	121.5	<b>2.5E-04</b>	27.5	<b>2.1E-04</b>
NKLTAG	GO-BP	GO:0031032~actomyosin structure	3 39	43.8	<b>2.0E-03</b>	4.8	1.0E+00
NKLTAG	GO-BP	GO:0006333~chromatin assembly or	3 39	10.0	<b>9.9E-03</b>	1.2	1.0E+00
NKLTAG	GO-BP	GO:0015031~protein transport	11 39	6.2	<b>5.6E-06</b>	2.8	4.5E-02
NKLTAG	GO-MF	GO:0000166~nucleotide binding	18 53	2.4	<b>5.5E-04</b>	1.5	1.2E-01
MEF diff	GO-CC	GO:0005635~nuclear envelope	4 30	12.4	<b>3.6E-03</b>		
MEF diff	GO-BP	GO:0034660~ncRNA metabolic	4 29	9.7	<b>7.1E-03</b>		
MEF diff	GO-BP	GO:0015031~protein transport	7 29	5.3	<b>1.4E-03</b>		
MEF diff	GO-BP	GO:0016070~RNA metabolic process	6 29	4.4	<b>8.7E-03</b>		
MEF diff	GO-MF	GO:0003924~GTPase activity	4 29	16.6	<b>1.6E-03</b>		
MEF diff	Reactome	823753:RAN binding protein 2	4 12	8.8	<b>6.9E-03</b>		



**Table S3. GO analysis for identified lamin A and progerin interacting proteins in MEFs.**

Identified lamin A and progerin interacting proteins in MEFs, as well as previously identified NE proteins were analyzed separately for the GO categories “cellular components” (GO-CC), “biological process” (GO-BP), “molecular function” (GO-MF), as well as the reactome (R) database.<sup>22</sup> Categories are listed together with the amount of proteins represented in the category versus to the total amount of annotated proteins, the enrichment factor compared to random protein sets and significance level. Significance p-values ( $p < 1 \times 10^{-3}$ ; statistic testing includes kappa statistic measurement and is further described elsewhere) are indicated in bold; non-significant values are underlined or blank in case no proteins was found within the respective GO-term.

Database	Database Category	MEF OST-A interacting proteins			MEF OST-P interacting proteins			Previously identified NE proteins		
		Proteins in category/ Total annotated Proteins	Enrichment Factor vs.	P-Value	Proteins in category/ Total annotated Proteins	Enrichment Factor vs.	P-Value	Proteins in category/ Total annotated Proteins	Enrichment Factor vs.	P-Value
GO-CC	GO:0005639~integral to nuclear inner membrane	3 141	101.	<b>2.9E-04</b>	3 170	82.4	<b>4.3E-04</b>	3 959	14.9	1.3E-02
GO-CC	GO:0005652~nuclear lamina	6 141	75.8	<b>4.7E-09</b>	7 170	72.1	<b>7.8E-11</b>	6 959	11.1	<b>6.4E-05</b>
GO-CC	GO:0005637~nuclear inner membrane	9 141	60.6	<b>4.3E-13</b>	10 170	54.9	<b>2.1E-14</b>	9 959	8.9	<b>1.7E-06</b>
GO-CC	GO:0031080~Nup107-160 complex	4 141	50.5	<b>5.0E-05</b>	3 170	30.9	<b>3.9E-03</b>	7 959	13.0	<b>2.3E-06</b>
GO-CC	GO:0005635~nuclear envelope	23 141	15.2	<b>8.5E-20</b>	22 170	11.8	<b>1.3E-16</b>	63 959	6.1	<b>3.8E-33</b>
GO-CC	GO:0048770~pigment granule	6 141	7.1	<b>1.5E-03</b>	7 170	6.8	<b>5.6E-04</b>	18 959	3.1	<b>4.2E-05</b>
GO-CC	GO:0030017~sarcomere	5 141	6.3	<b>7.9E-03</b>	4 170	4.1	7.2E-02	16 959	3.0	<b>2.5E-04</b>
GO-CC	GO:0005789~endoplasmic reticulum membrane	9 141	6.0	<b>1.3E-04</b>	8 170	4.3	<b>2.5E-03</b>	18 959	1.8	2.7E-02
GO-CC	GO:0044427~chromosomal part	13 141	4.1	<b>7.0E-05</b>	21 170	5.4	<b>1.6E-09</b>	58 959	2.7	<b>7.0E-12</b>
GO-CC	GO:0043232~intracellular non-membrane-	40 141	2.1	<b>5.0E-06</b>	53 170	2.3	<b>7.2E-09</b>	279 959	2.2	<b>1.3E-39</b>
GO-CC	GO:0044446~intracellular organelle part	60 141	1.9	<b>1.3E-07</b>	78 170	2.0	<b>5.4E-11</b>	495 959	2.3	<b>1.4E-93</b>
GO-BP	GO:0006998~nuclear envelope organization	4 120	52.7	<b>4.6E-05</b>	3 157	30.2	<b>4.1E-03</b>	6 876	10.8	<b>8.9E-05</b>
GO-BP	GO:0043242~negative regulation of protein	6 120	20.3	<b>1.0E-05</b>	4 157	10.4	<b>6.6E-03</b>	7 876	3.3	<b>9.1E-03</b>
GO-BP	GO:0006465~signal peptide processing	1 120	19.7	1.0E+00	3 157	45.3	<b>1.7E-03</b>	3 876	8.1	4.8E-02
GO-BP	GO:0051028~mRNA transport	7 120	13.4	<b>1.3E-05</b>	6 157	8.8	<b>5.8E-04</b>	43 876	11.3	<b>1.5E-36</b>
GO-BP	GO:0006913~nucleocytoplasmic transport	8 120	9.9	<b>1.6E-05</b>	5 157	4.7	2.1E-02	31 876	5.2	<b>4.0E-14</b>
GO-BP	GO:0015031~protein transport	34 120	6.2	<b>1.6E-17</b>	30 157	4.2	<b>9.0E-11</b>	87 876	2.2	<b>9.1E-12</b>
GO-BP	GO:0007264~small GTPase mediated signal	13 120	6.0	<b>1.7E-06</b>	13 157	4.6	<b>2.7E-05</b>	13 876	0.8	8.8E-01
GO-BP	GO:0006333~chromatin assembly or disassembly	5 120	5.4	1.3E-02	14 157	11.6	<b>1.9E-10</b>	27 876	4.0	<b>1.5E-09</b>
GO-BP	GO:0016192~vesicle-mediated transport	14 120	3.6	<b>1.4E-04</b>	16 157	3.1	<b>1.9E-04</b>	31 876	1.1	4.3E-01
GO-BP	GO:0016043~cellular component organization	33 120	2.1	<b>5.7E-05</b>	43 157	2.1	<b>4.1E-06</b>	192 876	1.6	<b>5.2E-13</b>
GO-BP	GO:0045454~cell redox homeostasis	1 120	1.9	1.0E+00	5 157	7.3	<b>4.7E-03</b>	0 876	0.0	
GO-MF	GO:0048407~platelet-derived growth factor	3 135	38.0	<b>2.6E-03</b>	0 167	0.0		3 926	5.5	9.8E-02
GO-MF	GO:0016864~intramolecular oxidoreductase	1 135	14.3	1.0E+00	3 167	34.6	<b>3.1E-03</b>	0 926	0.0	
GO-MF	GO:0008565~protein transporter activity	7 135	12.1	<b>2.3E-05</b>	3 167	4.2	1.6E-01	14 926	3.5	<b>1.3E-04</b>
GO-MF	GO:0005525~GTP binding	18 135	5.8	<b>1.2E-08</b>	19 167	5.0	<b>5.2E-08</b>	32 926	1.5	2.3E-02
GO-MF	GO:0003924~GTPase activity	6 135	5.3	<b>5.2E-03</b>	5 167	3.6	5.0E-02	22 926	2.9	<b>2.4E-05</b>
Reactome	810245:nucleoporin like 2	10 56	14.8	<b>7.2E-09</b>	10 62	13.3	<b>1.9E-08</b>	28 240	9.6	<b>2.1E-24</b>
Reactome	783524:SEC11 homolog A (S. cerevisiae)	4 56	9.0	<b>8.7E-03</b>	4 62	8.1	<b>9.8E-03</b>	4 240	2.1	2.9E-01
REactome	799755:proteasome (prosome, macropain) 26S	0 56	0.0		10 62	10.7		0 240	0.0	

**Table S4. Mass spectrometry data for identified lamin A and progerin interacting proteins in MEFs.** Mascot scores for identified lamin A and progerin interacting proteins in MEF+/+ and MEF-/- cell lines are listed. Interactors are categorized into interactors of lamin A, progerin or both. As many of the identified lamin A interactors were also detected at mascot scores just below inclusion criteria in progerin pull-down samples and vice versa, we used additional criteria (See material and methods) to identify preferential interactors. For selected preferential interactors it is indicated whether they were identified in two previous NE proteome studies (see grey shaded column) which had identified proteins in an INM/lumen/ONM<sup>6</sup> fraction or an INM/lamina/nucleoplasmic fraction<sup>10</sup>. Asterisk and hashes respectively indicate proteins localized to the ER lumen and extracellular regions.

IPI code	Entrez M.M.	Name	Identified as OST-A Interactor?	Identified as OST-P Interactor?	Preferential interactor?	MEFKO Ctrl	MEFKO Ctrl	MEFKO OST-A	MEFKO OST-A	MEFKO OST-P	MEFKO OST-P	MEFWT Ctrl	MEFWT Ctrl	MEFWT OST-A	MEFWT OST-A	MEFWT OST-P	MEFWT OST-P	Previously identified in NE?
<b>GO annotated: Nucleolar envelope, nuclear lamina, nuclear inner membrane, integral to nuclear inner membrane</b>																		
IPI00320303	234865	Nup133	Yes	No	No			265		107	52			119	39	87		Yes <sup>10</sup>
IPI00395038	103573	Xpo1	Yes	No	No		70	171	269	80	325	179		168	73	141		Yes <sup>10</sup>
IPI00331444	233726	Ipo7	Yes	No	No			86	178	50	54							Yes <sup>10</sup>
IPI00122594	226747	Ahctf1	Yes	No	Yes			285		64				61	32	52		No
IPI00620256	16905	Lmna	Yes	Yes	No			2825	2681	2654	2949	130	151	3970	3975	3365	3961	Yes <sup>6,10</sup>
IPI00230394	16906	Lmnb1	Yes	Yes	No			2339	2203	2328	2407			1999	1899	1668	1764	Yes <sup>6,10</sup>
IPI00113886	16907	Lmnb2	Yes	Yes	No			1765	1671	1652	1642			1263	1224	1152	1048	Yes <sup>6,10</sup>
IPI00896574	21917	LAP2 $\alpha$	Yes	Yes	No			1090	1136	1223	1147			1449	1326	1266	1249	Yes <sup>6,10</sup>
IPI00828976	21917	LAP2 $\epsilon$	Yes	Yes	No			1626	1556	1686	1519			1501	1535	1505	1484	Yes <sup>6,10</sup>
IPI00853982	380664	Lemd3	Yes	Yes	No			1106	840	962	689			794	841	644	411	Yes <sup>6,10</sup>
IPI00263505	77053	Unc84a/SUN1	Yes	Yes	No			1022	202	760	580			260	149	266	121	Yes <sup>6,10</sup>
IPI00460291	223697	Unc84b/SUN2	Yes	Yes	No			985	720	1566	1280			1318	1227	1449	1126	Yes <sup>10</sup>
IPI00122215	208263	Tor1aip1	Yes	Yes	No		36	917	1013	973	858			859	809	746	788	Yes <sup>10</sup>
IPI00331173	98386	Lbr	Yes	Yes	No	260		793	396	778	792			398	349	472	189	Yes <sup>6,10</sup>
IPI00465876	224640	Lemd2	Yes	Yes	No			577	488	677	340			608	494	309	415	Yes <sup>10</sup>
IPI00114401	13726	Emd	Yes	Yes	No			549	508	680	520		39	659	644	679	681	Yes <sup>6,10</sup>
IPI00129535	59015	Nup160	Yes	Yes	No			499		134	134			90	61	266		Yes <sup>6,10</sup>
IPI00453821	170762	Nup155	Yes	Yes	No			308	87	302	171			418	295	170	45	Yes <sup>6,10</sup>
IPI00410800	1E+08	LOC100039128	Yes	Yes	No	32		225	187	137	142		44	153	153	114	62	Yes <sup>6,10</sup>
IPI00474558	269966	Nup98	Yes	Yes	Yes			148	208					187	266	170	80	Yes <sup>6,10</sup>
IPI00880644	108989	Tpr	Yes	Yes	Yes			115	353		84			95	440		266	Yes <sup>10</sup>
IPI00221767	103468	Nup107	Yes	Yes	No			94	63					304	201	100	149	Yes <sup>6,10</sup>
IPI00116877	212999	Tnpo2	Yes	Yes	No	30	37				44		30	153	110		193	Yes <sup>10</sup>
IPI00850755	18538	Pcna	Yes	Yes	Yes			79	36	144	234				108	51	150	No
IPI00461532	445007	Nup85	No	Yes	No			77	42					87		109		Yes <sup>6,10</sup>
IPI00420243	18141	Nup50	No	Yes	No									84	87	123	93	Yes <sup>6,10</sup>
IPI00121487	106582	Nrm	No	Yes	No			82		161	91			42				Yes <sup>6</sup>

GO annotated: Nuclear pore																		
IPI00320303	234865	Nup133	Yes	No	No			265		107	52			119	39	87		Yes <sup>10</sup>
IPI00395038	103573	Xpo1	Yes	No	No		70	171	269	80	325	179		168	73	141		Yes <sup>10</sup>
IPI00331444	233726	Ipo7	Yes	No	No			86	178	50	54							Yes <sup>10</sup>
IPI00122594	226747	Ahctf1	Yes	No	Yes			285		64				61	32	52		No
IPI00129535	59015	Nup160	Yes	Yes	No			499		134	134			90	61	266		Yes <sup>6,10</sup>
IPI00453821	170762	Nup155	Yes	Yes	No			308	87	302	171			418	295	170	45	Yes <sup>6,10</sup>
IPI00410800	1E+08	LOC100039128	Yes	Yes	No	32		225	187	137	142		44	153	153	114	62	Yes <sup>6,10</sup>
IPI00474558	269966	Nup98	Yes	Yes	Yes			148	208					187	266	170	80	Yes <sup>6,10</sup>
IPI00880644	108989	Tpr	Yes	Yes	Yes			115	353		84			95	440		266	Yes <sup>10</sup>
IPI00221767	103468	Nup107	Yes	Yes	No			94	63					304	201	100	149	Yes <sup>6,10</sup>
IPI00116877	212999	Tnpo2	Yes	Yes	No	30	37				44		30	153	110		193	Yes <sup>10</sup>
IPI00420243	18141	Nup50	No	Yes	No									84	87	123	93	Yes <sup>6,10</sup>
GO annotated: Chromatin assembly or disassembly, chromosomal part																		
IPI00320303	234865	Nup133	Yes	No	No			265		107	52			119	39	87		Yes <sup>10</sup>
IPI00395038	103573	Xpo1	Yes	No	No		70	171	269	80	325	179		168	73	141		Yes <sup>10</sup>
IPI00122594	226747	Ahctf1	Yes	No	Yes			285		64				61	32	52		No
IPI00896574	21917	LAP2α	Yes	Yes	No			1090	1136	1223	1147			1449	1326	1266	1249	Yes <sup>6,10</sup>
IPI00828976	21917	LAP2ε	Yes	Yes	No			1626	1556	1686	1519			1501	1535	1505	1484	Yes <sup>6,10</sup>
IPI00460291	223697	Unc84b/SUN2	Yes	Yes	No			985	720	1566	1280			1318	1227	1449	1126	Yes <sup>10</sup>
IPI00129535	59015	Nup160	Yes	Yes	No			499		134	134			90	61	266		Yes <sup>6,10</sup>
IPI00649286	12412	Cbx1	Yes	Yes	No	150		380	291	439	348			120	137	163	230	Yes <sup>10</sup>
IPI00919098	77605	H2afv	Yes	Yes	No			160	162	155	217		108	170	157	163		Yes <sup>10</sup>
IPI00378480	26914	H2afy	Yes	Yes	No			150	172	136	295					47		Yes <sup>10</sup>
IPI00221767	103468	Nup107	Yes	Yes	No			94	63					304	201	100	149	Yes <sup>6,10</sup>
IPI00331597	14957	Hist1h1d	Yes	Yes	No	170		163	178	275	373			158	120	194		No
IPI00850755	18538	Pcna	Yes	Yes	Yes			79	36	144	234				108	51	150	No
IPI00225350	12566	Cdk2	Yes	Yes	No				68	66	67			81	131	141		No
IPI00331734	666634	H2AFZ	No	Yes	No		134										169	Yes <sup>10</sup>
IPI00459318	319188	Hist1h2bp	No	Yes	No						106							Yes <sup>10</sup>
IPI00111957	319177	Hist1h2ba	No	Yes	No						100							Yes <sup>10</sup>
IPI00123755	12419	Cbx5	No	Yes	No	113	32	146	212	526	115	65	121	153	135	172	350	No
IPI00230133	56702	Hist1h1b	No	Yes	No		83	68	84	106	220			39	38	101	112	No
IPI00223713	50708	Hist1h1c	No	Yes	No		158										203	No
IPI00272033	319176	Hist2h2ac	No	Yes	No					185								No
IPI00230264	15270	H2afx	No	Yes	No						171							No

IPI00553538	319152	Hist1h3h	No	Yes	No		80										109	No
<b>GO annotated: Cytoskeleton, actin cytoskeleton, sarcomere</b>																		
IPI00338039	22151	Tubb2a	Yes	No	No			936	1076			827					1041	Yes <sup>10</sup>
IPI00831369	20742	Spnb2	Yes	No	No			427	771		52		58			80	72	Yes <sup>10</sup>
IPI00753793	20740	Spna2	Yes	No	No		42	191	520		109		90	32		160	201	Yes <sup>10</sup>
IPI00229475	16480	Jup <sup>#</sup>	Yes	No	No				108	64								Yes <sup>10</sup>
IPI00321646	230249	Al314180	Yes	No	No		74	266	215	30	29							No
IPI00458127	13169	Dbnl	Yes	No	No	35	84	166	221	76	84	59	161			96	114	No
IPI00923036	18571	Pdcd6ip	Yes	No	No			158	250	45	153	65	50	63	37	66	63	No
IPI00315504	56327	Arl2	Yes	No	No		47		152	106	59	51		64		31	70	No
IPI00620256	16905	Lmna	Yes	Yes	No			2825	2681	2654	2949	130	151	3970	3975	3365	3961	Yes <sup>6,10</sup>
IPI00230394	16906	Lmnb1	Yes	Yes	No			2339	2203	2328	2407			1999	1899	1668	1764	Yes <sup>6,10</sup>
IPI00113886	16907	Lmnb2	Yes	Yes	No			1765	1671	1652	1642			1263	1224	1152	1048	Yes <sup>6,10</sup>
IPI00119876	13424	Dync1h1	Yes	Yes	No	186	88	1365	383	483	1455					42	31	Yes <sup>10</sup>
IPI00114401	13726	Emd	Yes	Yes	No			549	508	680	520		39	659	644	679	681	Yes <sup>6,10</sup>
IPI00132475	70361	Lman1	Yes	Yes	No		87	368	347	47	180			38	44	213	45	Yes <sup>6</sup>
IPI00776140	12345	Capzb	Yes	Yes	No	180	221	296	338	341	335	38	31	62	153	281	163	Yes <sup>10</sup>
IPI00378480	26914	H2afy	Yes	Yes	No			150	172	136	295					47		Yes <sup>10</sup>
IPI00276222	218952	Plekhc1	Yes	Yes	No			114			168	48				43		Yes <sup>10</sup>
IPI00109061	73710	Tubb2b	Yes	Yes	No						951			778				Yes <sup>10</sup>
IPI00133218	67166	Arl8b	Yes	Yes	No			291	221	265	349	154		53	114	305	92	No
IPI00406741	17758	Mtap4	Yes	Yes	No		59	273	343	83	264					65	153	No
IPI00467104	1E+08	FLI1	Yes	Yes	No			125		160	200					43		No
IPI00314844	19230	Twf1	Yes	Yes	No			119		87	80					116		No
IPI00116112	69654	Dctn2	Yes	Yes	No			86	134	54	146					57		No
IPI00653921	19684	Rdx	Yes	Yes	No				362		584		185	72				No
IPI00222228	239673	4732456N10Rik	Yes	Yes	No					146					211			No
IPI00875117	12933	Crmp1	Yes	Yes	No				140						91	105	104	No
IPI00461532	445007	Nup85	No	Yes	No			77	42					87		109		Yes <sup>6,10</sup>
IPI00117043	11475	Acta2	No	Yes	No					461	583	742	655	824	840		702	No
IPI00874728	22004	Tpm2	No	Yes	Yes						437	218	280	129	268	244	336	No
IPI00475177	20744	Strbp	No	Yes	No									89		133		No
IPI00624876	22323	Vasp	No	Yes	No		30	74	79	103	108	175	147	86	197	150	152	No
IPI00124820	23790	Coro1c	No	Yes	No						103	88		69	92	70	97	No
IPI00222509	1E+08	RCC2	No	Yes	No	34		66		106	104			36	46	41		No
IPI00869430	12331	Cap1 <sup>#</sup>	No	Yes	No			73	46	181	145			35	39	65		No

IPI00330063	12340	Capza1	No	Yes	No		165	143	71	176	271		34		97	123	124	No
IPI00117896	667264	BIM1p	No	Yes	No			50	122	112	122		45		80	108	77	No
IPI00850054	18950	Pnp	No	Yes	Yes	36		40		142	194				113		No	
IPI00221613	545267	ARF1	No	Yes	No											391	No	
IPI00111117	74192	Arpc5l	No	Yes	No						109					91	No	
IPI00856759	17524	Mpp1	No	Yes	Yes					155	66					58	No	
<b>GO annotated: Endoplasmic reticulum (including GO subcategory 'Endoplasmic reticulum lumen', indicated by asterisk)</b>																		
IPI00109221	83493	Sacm1l	Yes	No	No			581		38	96							Yes <sup>6</sup>
IPI00882182	76893	Lass2	Yes	No	No			101										Yes <sup>10</sup>
IPI00468900	11938	Atp2a2	Yes	No	No	231		822		104	274				34			No
IPI00474904	65973	Asph	Yes	No	No		125	506	463	203	243						33	No
IPI00845575	109168	5730596K20Rik	Yes	No	Yes	73	135	384	335	90	87			74	76	99		No
IPI00222412	230709	Zmpste24	Yes	No	No			270			69							No
IPI00321646	230249	Al314180	Yes	No	No		74	266	215	30	29							No
IPI00754923	14950	H13	Yes	No	No			181		28	85							No
IPI00938457	69162	Sec31a	Yes	No	No			167	125		87	90				56		No
IPI00316469	68292	Stt3b	Yes	No	No			167		29								No
IPI00162949	52858	Cdipt	Yes	No	No			157			79							No
IPI00226882	53421	Sec61a1	Yes	No	No			122										No
IPI00115490	13026	Pcyt1a	Yes	Yes	No			435	455	475	285							Yes <sup>10</sup>
IPI00132475	70361	Lman1	Yes	Yes	No		87	368	347	47	180			38	44	213	45	Yes <sup>6</sup>
IPI00228236	66624	Spcs2	Yes	Yes	No	110	104	319	321	377	331			219	205	201	195	Yes <sup>6,10</sup>
IPI00115668	13480	Dpm1 <sup>#</sup>	Yes	Yes	No			170	108	67	179					78		Yes <sup>10</sup>
IPI00831534	13849	Ephx1	Yes	Yes	No			76	139	192	323	56	34	62	145	151	60	Yes <sup>6</sup>
IPI00120083	74122	Tmem43	Yes	Yes	Yes			53		165	197			201	128	175	169	Yes <sup>6</sup>
IPI00309035	103963	Rpn1	Yes	Yes	No	533	442	809	332	733	761	97	50	252	202	314	133	No
IPI00880617	20333	Sec22b	Yes	Yes	No	71		454	398	489	338	100	93	351	346	502	386	No
IPI00127406	26433	Plod3	Yes	Yes	No			347	378	101	161					94		No
IPI00319973	53328	Pgrmc1	Yes	Yes	No	185	34	333	340	408	434			144	148	184	241	No
IPI00132350	67006	Cisd2	Yes	Yes	No			164	62	232	142					34	59	No
IPI00133249	20932	Surf4	Yes	Yes	No			147		106	151			69		57		No
IPI00453798	67988	Txndc10	Yes	Yes	No			127	147		74					77	161	No
IPI00377449	69922	Vrk2	Yes	Yes	No			112	188	469	115			377	121	148	122	No
IPI00115644	20224	Sar1a	Yes	Yes	No	74		100	147	94	75	46	36	128	163	140	122	No
IPI00132194	13722	Scye1 <sup>#</sup>	Yes	Yes	Yes			96	114	189	208	47			57	130	173	No
IPI00137227	59021	Rab2	No	Yes	No	261	118	582	275	674	603	233	52	284	399	456	170	Yes <sup>10</sup>

IPI00118930	108124	Napa	No	Yes	No	30	165	186	221	343	338	175	137	173	232	422	346	Yes <sup>10</sup>
IPI00894977	56529	Sec11a	No	Yes	No	265	133	208	249	290	180			109	73	209	84	Yes <sup>10</sup>
IPI00410819	13200	Ddost	No	Yes	No	171	196	251	232	320	331	58	29	103	100	214	79	Yes <sup>6</sup>
IPI00880783	18984	Por	No	Yes	No	51	107	45	58		208				31	186		Yes <sup>6</sup>
IPI00653744	98238	Lrrc59	No	Yes	No	117	171	191	353	434	387	88	129	291	264	456	426	No
IPI00126042	68365	Rab14	No	Yes	No	208	113	317	255	515	472	185		236	206	238		No
IPI00850678	671392	set	No	Yes	No	169		52		154	149	62	55	167	165	173	216	No
IPI00420727	76687	Spcs3	No	Yes	No	87		147	142	159	150				63	103		No
IPI00121341	72736	Txndc1	No	Yes	No			103	80	59	157							No
IPI00136098	17252	Rdh11	No	Yes	No			80	103	178	153							No
IPI00312018	109154	2410014A08Rik	No	Yes	No			29		211	148							No
IPI00754386	50527	Ero1l	No	Yes	No						152							No
IPI00881096	108123	Napg	No	Yes	Yes				30	161	128					46		No
IPI00762897	1E+08	Uggt1*	Yes	Yes	No	70		399	234	368	530					34		Yes <sup>10</sup>
IPI00230108	14827	Pdia3*	No	Yes	No	287	665	669	627	558	854	171	140	239	293	422	678	No
IPI00133522	18453	P4hb*	No	Yes	No	381	717	358	646	585	694	65		97	74	132	376	No
<b>GO annotated: Proteasome complex</b>																		
IPI00321646	230249	Al314180	Yes	No	No		74	266	215	30	29							No
IPI00128945	26445	Psmb2	Yes	No	No	107		55	48	173	118				112	80		No
IPI00675436	21762	Psmd2	Yes	Yes	No	35	49	440	632	203	442					73		No
IPI00652694	22123	Psmd3	Yes	Yes	No	77	46	243		190	267	43						No
IPI00457661	66998	Psmd5	No	Yes	No		34	88	112	166	262	138	131	131	188	272	275	No
IPI00875197	19173	Psmb5	No	Yes	No	177	77	401	207	400	455	77				135		No
IPI00114667	17463	Psmd7	No	Yes	No	37	57	66	115	73	280					55	40	No
IPI00283862	26440	Psma1	No	Yes	No			39			192							No
IPI00856490	57296	Psmd8	No	Yes	No						108							No
IPI00124223	665766	PSME1	No	Yes	Yes					49	196		40			71	113	No
<b>Other GO categories, or not GO annotated</b>																		
IPI00762905	1E+08	gcn1l	Yes	No	No	57	54	239	177	35	113	94	88	69	54	203	40	Yes <sup>10</sup>
IPI00310131	11772	Ap2a2	Yes	No	No		43	183	123	61	160							Yes <sup>10</sup>
IPI00396739	93762	Smarca5	Yes	No	No			180	68	71								Yes <sup>10</sup>
IPI00622911	11771	Ap2a1	Yes	No	No			177	96									Yes <sup>10</sup>
IPI00222188	12843	Col1a2 <sup>#</sup>	Yes	No	No	49		157	289	32	61							Yes <sup>10</sup>
IPI00623191	12842	Col1a1 <sup>#</sup>	Yes	No	No	36	71	156	213	73	130		114		198		157	Yes <sup>10</sup>
IPI00876119	20652	Soat1	Yes	No	No			106		60	94			52	61	110	62	Yes <sup>10</sup>
IPI00776338	212073	4831426I19Rik	Yes	No	No			105	310								99	Yes <sup>10</sup>



IPI00230440	269378	Ahcy	Yes	No	No		71	468	425	231	194	60		82	147	243	58	No
IPI00120503	70349	Copb1	Yes	No	No	86	97	441	258	208	326	114	90	38		116	43	No
IPI00310091	51792	Ppp2r1a	Yes	No	No		66	292	164	48	132		34	74	56	32	166	No
IPI00761611	672511	Rnf213	Yes	No	No			242				84				213		No
IPI00129571	12825	Col3a1 <sup>#</sup>	Yes	No	No			237	425									No
IPI00876212	1E+08	LOC100042058	Yes	No	No	309		230	181	197	255				115			No
IPI00118827	103266	AI597468	Yes	No	No			226	161									No
IPI00761666	320528	Vps13c	Yes	No	No			196						54				No
IPI00230192	14681	Gnao1	Yes	No	Yes			182	202					86				No
IPI00322145	57874	Ptplad1	Yes	No	No	56		176		143	155			43		47		No
IPI00128376	105387	Akr1c14	Yes	No	No		33	164	84									No
IPI00131606	21982	Tmem165	Yes	No	No			155										No
IPI00119113	11966	Atp6v1b2	Yes	No	No		46	155	182	103	86							No
IPI00885380	18542	Pcolce <sup>#</sup>	Yes	No	No			149	75							52		No
IPI00222429	211548	Nomo1	Yes	No	No			141		51	97							No
IPI00136012	56316	Ggcx	Yes	No	No			136		40	49	33						No
IPI00416751	63959	Slc29a1	Yes	No	No			127										No
IPI00918505	20848	Stat3	Yes	No	No			127				83			90	150		No
IPI00890921	26885	Casp8ap2	Yes	No	No			121					48					No
IPI00623214	56305	Pitpnb	Yes	No	No			120	153	96	70					88	41	No
IPI00624746	1E+08	impD	Yes	No	No			119		98								No
IPI00132057	433204	LOC433204	Yes	No	No			118										No
IPI00226260	107358	Tm9sf3	Yes	No	No			112										No
IPI00885610	24045	Scamp3	Yes	No	No			111										No
IPI00877337	216820	Dhrs7b	Yes	No	No			110										No
IPI00890284	19338	Rab33b	Yes	No	No			110	100									No
IPI00831544	20430	Cyfp1	Yes	No	No			107		47	67							No
IPI00114948	80876	Ifitm2	Yes	No	No			106										No
IPI00331577	1E+08	SLC7A5	Yes	No	No			106			61							No
IPI00128760	664953	Ubce7	Yes	No	No			105	117		93			127		44	75	No
IPI00896668	53881	Slc5a3	Yes	No	No			103										No
IPI00467004	20846	Stat1	Yes	No	No			89	125							119	74	No
IPI00930846	21399	Tcea1	Yes	No	No	194	103	88	143	68	197		33	83	171	97	72	No
IPI00876197	56758	Mbnl1	Yes	No	Yes			75		33				67	140			No
IPI00649871	230073	Ddx58	Yes	No	No			53	149			59			48	90		No
IPI00378145	270192	Rab6b	Yes	No	Yes				202					205	154			No

IPI00752798	668668	EG668668	Yes	No	No	286					349			122	162			No
IPI00742438	18749	Prkacb	Yes	No	No				139									No
IPI00876048	17931	Ppp1r12a	Yes	No	No				129									No
IPI00849985	1E+08	Ube-2	Yes	No	No				126									No
IPI00135969	11566	Adss	Yes	No	No				127	38	91		45		184	225		No
IPI00331152	12988	Csk	Yes	No	No				122				58					No
IPI00663582	545121	Gm5805	Yes	No	No										115			No
IPI00454037	67023	Use1	Yes	No	No										135		46	No
IPI00132397	66397	Sar1b	Yes	No	No	52				66	74		33	103			92	No
IPI00230003	18738	Pitpna	Yes	No	No				110	41						33		No
IPI00330624	21820	Nup153	Yes	Yes	Yes			448	155	59	142			247	189	282		Yes <sup>6,10</sup>
IPI00351206	70804	Pgrmc2	Yes	Yes	Yes			402	237	630	576					99	150	Yes <sup>6</sup>
IPI00221616	11845	Arf6	Yes	Yes	No	64	60	363	217	354	284	51	56	81	41	117	104	Yes <sup>10</sup>
IPI00929832	70699	Nup205	Yes	Yes	No			317	289	262	52			364	477	297	59	Yes <sup>6,10</sup>
IPI00849548	19344	Rab5b	Yes	Yes	Yes			276	302	351	349					266		Yes <sup>10</sup>
IPI00135443	21974	Top2b	Yes	Yes	No	197	47	271	58	172	302	36		85	138	169	48	Yes <sup>10</sup>
IPI00128450	23943	Mbc2	Yes	Yes	No		30	265	127	125	137							Yes <sup>6</sup>
IPI00759945	11545	Parp1	Yes	Yes	No			228	162	180	77			91	198	142	52	Yes <sup>10</sup>
IPI00679159	668144	EG668144	Yes	Yes	No			156	83	239	244		31		37			Yes <sup>10</sup>
IPI00119063	16971	Lrp1	Yes	Yes	No	119	227	617	433	229	582		40	89	98	168	127	No
IPI00817018	252870	Usp7	Yes	Yes	No	52		433	114	256	436			42		44	81	No
IPI00116283	12462	Cct3	Yes	Yes	No	254	387	407	352	357	461	42	49	173		272	57	No
IPI00116770	19330	Rab18	Yes	Yes	No	192	298	396	467	606	577	74	130	359	335	389	286	No
IPI00130118	19325	Rab10	Yes	Yes	No			352		385	378							No
IPI00128692	18194	Nsdhl	Yes	Yes	No			210	125	119	121					65	73	No
IPI00649022	14387	Gaa	Yes	Yes	No	30		168	114	147	75							No
IPI00468209	69834	Rab43	Yes	Yes	No			124		177	147							No
IPI00404970	667205	Cdc42GAP	Yes	Yes	No			84	174		119	39						No
IPI00353563	14086	Fscn1	Yes	Yes	No	44	52	67		266	211			70	185	191		No
IPI00311873	19046	Ppp1cb	Yes	Yes	No		249				502				175	402		No
IPI00338854	14679	Gnai3	Yes	Yes	No				170		249							No
IPI00648683	11764	Ap1b1	Yes	Yes	No				142					68	79	138	98	No
IPI00116031	433739	RBM10	No	Yes	No		117			121		143	51	149	156	354	278	Yes <sup>10</sup>
IPI00225201	105148	lars	No	Yes	No	232	443	409	160	478	628	75	58	91	75	241		Yes <sup>10</sup>
IPI00132966	433862	Cyp-40	No	Yes	Yes		121		52	199	179			82	110	107	199	Yes <sup>10</sup>
IPI00881909	12816	Col12a1 <sup>#</sup>	No	Yes	No	38					166			78		44		Yes <sup>10</sup>

IPI00850734	15502	Dnaja1	No	Yes	No	123	33	121	132	161	218			66	129	187	110	Yes <sup>10</sup>
IPI00857796	21841	Tia1	No	Yes	No					104		174	110	50	179	268	257	Yes <sup>10</sup>
IPI00828216	245688	Rbbp7	No	Yes	No			71	124		131		39	30	62	38		Yes <sup>10</sup>
IPI00223437	54161	Copg	No	Yes	No		171	335	299	71	174					127		Yes <sup>10</sup>
IPI00828225	27061	Bcap31	No	Yes	No			138	56	122	96					35	30	Yes <sup>6</sup>
IPI00785470	56348	Hsd17b12 <sup>#</sup>	No	Yes	No			57	127	108	133				52	72	55	Yes <sup>6</sup>
IPI00133708	110957	D1Pas1	No	Yes	No											780		Yes <sup>10</sup>
IPI00323674	20227	Sart1	No	Yes	No	744									38	79	221	Yes <sup>10</sup>
IPI00785231	18949	Pnn	No	Yes	Yes	597				98						67	143	Yes <sup>10</sup>
IPI00626402	100088	Rcc1	No	Yes	No					85	153				37			Yes <sup>10</sup>
IPI00121434	71973	Rbpms2	No	Yes	No					106		47				88	70	Yes <sup>10</sup>
IPI00226515	21345	Tagln	No	Yes	No						122	519	571	610	694	620	564	No
IPI00877291	11746	Anxa4	No	Yes	No	475	473	812	750	469	433	126	63	199	236	315	282	No
IPI00671512	675985	Gm16406	No	Yes	No						247			109	89	196		No
IPI00857053	17220	Mcm7	No	Yes	No	75	58	80	162	197	218	45	41	107	82	190	142	No
IPI00111181	65114	Vps35	No	Yes	Yes	162	316	317	546	325	589	66	218	91	171	376	517	No
IPI00116281	12466	Cct6a	No	Yes	No	135	232	268	341	222	269		32	86	71	121	82	No
IPI00410836	14156	Fen1	No	Yes	Yes					172	139	46	67	83	152	180	163	No
IPI00311968	14300	Frg1	No	Yes	Yes	91			81	226	50			78	45	128		No
IPI00309195	19653	Rbm4	No	Yes	No					121		109	135	74			48	No
IPI00659447	380928	Lmo7	No	Yes	No							64	86	69		392	207	No
IPI00132089	19072	Prep	No	Yes	Yes	64					260	129	69	64	51	279		No
IPI00351266	72162	Dhx36	No	Yes	No	31		57		39		29		58	52	135	68	No
IPI00123881	17219	Mcm6	No	Yes	No			49	82	82	179			57		60	74	No
IPI00331556	15525	Hspa4	No	Yes	Yes	54	145	140	44	282	386	32		55	42	72	47	No
IPI00848364	1E+08	Gm3940	No	Yes	No								45	51		169		No
IPI00461281	52653	Nudcd2	No	Yes	No	39	39		41	120		69	44	46	42	64	65	No
IPI00222515	69077	Psmd11	No	Yes	No			40	36	86	164	34	47	45	64	52	36	No
IPI00757459	12388	Ctnnd1	No	Yes	No				66			59	45	39	55	186	314	No
IPI00114285	14873	Gsto1	No	Yes	No	36	41	118	98	159	240	121	36	38	51	194	126	No
IPI00918305	1E+08	AHNAK2	No	Yes	No				64		112	74	61	38	52	63	76	No
IPI00894870	28114	Nsun2	No	Yes	Yes	46	65	41	72	142	221	107	91	37	116	183	164	No
IPI00881557	22235	Ugdh	No	Yes	No	80		50	136	234	333	33		34				No
IPI00339428	67299	Dock7	No	Yes	No						112			33			31	No
IPI00652902	14678	Gnai2	No	Yes	No	235	279	298	305	370	437				85	198		No
IPI00776216	30930	Vps26a	No	Yes	No	150	34	284	215	269	315	31				133	34	No

IPI00930882	17254	Slc3a2	No	Yes	No	71	55	231	125	256	307							No
IPI00230721	12903	Crabp1	No	Yes	Yes	255		201	195	411	311	36	99		69	319	238	No
IPI00123278	69051	Pycr2	No	Yes	No	126	83	167	158	216	258	33				102		No
IPI00133931	66120	Fkbp11	No	Yes	No		42	99	85	136	150				86	98	61	No
IPI00119853	14683	Gnas	No	Yes	Yes		38	96	116	116	247					104	96	No
IPI00468688	110960	Tars	No	Yes	Yes	35		82	40	219	370		32			164	34	No
IPI00915484	20204	Prrx2	No	Yes	No			76	85	61					42		130	No
IPI00284806	15452	Hprt1	No	Yes	No	39		69	69	124	115					70	58	No
IPI00875405	70247	Psmc1	No	Yes	No			65	37	44	164							No
IPI00313841	11972	Atp6v0d1	No	Yes	No		32	54			169					34		No
IPI00111981	67059	Ola1	No	Yes	No			43	38	115					49	35	123	No
IPI00315550	620016	LOC620016	No	Yes	YEs		37	37	44	42	45		38		55	127	133	No
IPI00624501	56495	Asna1	No	Yes	No			32	49	135	159							No
IPI00555002	76108	Rap2a	No	Yes	No			30			106		38			44		No
IPI00669935	21825	Thbs1 <sup>#</sup>	No	Yes	Yes	144	122			447	807					41		No
IPI00123176	622339	EG622339	No	Yes	No											395		No
IPI00137145	67543	Pabpc3	No	Yes	Yes						102					551		No
IPI00311569	227620	Uap1l1	No	Yes	No		102					31				194	197	No
IPI00116734	19335	Rab23	No	Yes	No						167							No
IPI00108844	17113	M6pr	No	Yes	No						138							No
IPI00411102	110639	Prps2	No	Yes	No						132							No
IPI00318564	68991	Ssu72	No	Yes	No										59	170	166	No
IPI00762203	634386	FTL2 <sup>#</sup>	No	Yes	Yes					36	280						70	No
IPI00918973	20901	Strap	No	Yes	No					60	191							No
IPI00111959	51797	Ctps	No	Yes	No						122							No
IPI00113127	19341	Rab4a	No	Yes	No												122	No
IPI00134206	67622	Mxra7	No	Yes	No						109							No
IPI00118248	18933	Prx1	No	Yes	Yes					56						107	163	No
IPI00318204	75456	Prps1l1	No	Yes	No						108							No
IPI00123465	26894	Cops7a	No	Yes	No		39		64		147							No
IPI00221908	241490	Rbm45	No	Yes	Yes	63	46			123						125	118	No
IPI00229703	22318	Vamp2	No	Yes	No						100							No
IPI00875087	665834	Gm7813	No	Yes	No										90	108		No