

Additional File 4: Lists of the genes represented by redundant clones in the RGP and Met libraries. The tables contain the identifier, Gene Ontology annotation and available information about role in cancer related processes for the genes represented by redundant clones in the RGP and Met libraries.

Table S3: Genes represented by a redundant number of sequences in the RGP SSH library

Symbol	Accession number	Redundancy	GO function	Reported in cancer	Reported in melanoma
ACAT2	NM_005891	2	acyltransferase activity	upregulation in hepatocarcinoma [1]	ND
ACTB	NM_001101	3	structural constituent of cytoskeleton	actin dynamics alteration is observed in tumor progression [2]	
ACTG1	NM_001614	2	structural constituent of cytoskeleton	actin dynamics alteration is observed in tumor progression [2]	reduction of gamma-actin in invasive melanoma cells have been reported [3]
ALS2CR7	NM_139158	10	protein serine/threonine kinase activity	ND	ND
ANLN	NM_018685	2	actin binding	overexpressed in several tumors [4]	ND
CFH	NM_000186	5	innate immune response	overexpressed in ovarian carcinomas [5]	ND
CNOT7	NM_054026	2	transcription factor activity	ND	ND
CXCL11	NM_005409	2	chemokine activity	induction of CTL cells migration to tumors and apoptosis of tumor cells [6]	seems to contribute to metastasis of B16 melanoma cells [7]
DCN	NM_133503	8	small proteoglycan, transferase activity	tumor growth suppression [8, 9]	expressed in melanoma cell lines from different stages [10]. Inhibition of TGF- β stimulated adhesion of melanoma cells to endothelium [11]
DDX1	NM_004939	2	RNA helicase activity	co-amplified with MYCN and overexpressed in neuroblastoma and retinoblastoma cell lines [12]	ND
EIF4G2	NM_001418	2	translation initiation factor activity	downregulated in bladder carcinoma [13]	ND
FAM33A	AK056473	2	no evidence	ND	ND
FAM54A	NM_138419	2	no evidence	ND	ND
FSTL5	NM_020116	3	calcium ion binding	ND	ND

GNG11	NM_004126	2	signal transducer activity	downregulated in splenic marginal zone lymphoma [14]	ND
HMGB2	NM_002129	2	DNA binding, DNA bending activity, transcription factor activity	overexpressed, although associated to a better prognosis in epithelial ovarian cancer [15]	ND
KCTD3	NM_016121	2	voltage-gated potassium channel activity	ND	ND
MBOAT1	NM_175879	4	no evidence	ND	ND
MFAP4	NM_002404	3	calcium ion binding, protein binding, cell adhesion	ND	ND
MYCBP	NM_012333	2	transcription coactivator activity	upregulated in colon carcinoma cells overexpressing LEF-1 [16]	ND
NBPF14*	NM_015383	2RGP, 1MET	no evidence	ND	ND
NME7	NM_013330	2	kinase activity	ND	ND
NUCKS1	NM_022731	2	kinase activity	ND	ND
NUP160	NM_015231	3	nucleocytoplasmic transporter activity	ND	ND
OR51E2	NM_030774	2	olfactory receptor activity	overexpressed in prostate cancer [17]	ND
PHF20	NM_016436	2	nucleic acid binding, transcriptional regulation	overexpressed in small cell lung cancer [18]	ND
POGZ	NM_015100	2	nucleic acid binding, transcriptional regulation	ND	ND
POLD3	D26018	2	delta DNA polymerase activity	ND	ND
PPT1	NM_000310	2	hydrolase activity	overexpressed in colorectal carcinoma [19]	ND
PSMA4	NM_002789	3	threonine endopeptidase activity	ND	ND
RBM25	NM_021239	2	mRNA binding, mRNA splicing	ND	ND
RGS2	NM_002923	2	GTPase activator activity, calmodulin binding, signal transducer activity	repressed in myeloid transformation [20]	ND
RUNX2	NM_001015051	2	transcription factor activity	There are evidencies showing runx proteins may act under different circumstances in both an oncogenic and tumor suppressor role [21]	ND
SET	NM_003011	2	histone binding, fosfatase inhibitor	histone acetyltransferase inhibitor, up-regulated in several tumors [22]	ND

SLC35B1	NM_005827	2	UDP-galactose transporter activity	ND	ND
TMTC3	NM_181783	2RGP, 1MET	ND	ND	ND
WDR35	NM_001006657	2	ND	ND	ND

See references in the reference file of the supplementary material
ND: Not described

Table S4: Genes represented by a redundant number of sequences in the Met SSH library

Symbol	Accession number	Redundancy	GO function	Reported in cancer	Reported in melanoma
A2M	NM_000014	12	protein carrier activity	hepatocarcinoma [23]	ND
APOD	NM_001647	2	lipid transporter activity	overexpressed in breast and prostate cancer [24]	the percentage of Apo-D positive tumors is higher in VGP than in RGP melanomas [25]
C18orf19	NM_152352	3	ND	ND	ND
CD200	NM_005944	3	integral to plasma membrane	suppression of tumor growth inhibition [26]	ND
CD59	NM_000611	9	GPI anchor binding/immune response	protects tumor cells from complement mediated lysis [27]	overexpression of CD59 in melanoma cells protects them from complement mediated lysis [28]
CHI3L2	NM_004000	2	hydrolase activity/carbohydrate metabolism	ND	ND
CPM	NM_001005502	2	GPI anchor binding, carboxypeptidase A activity, ferric iron binding , metal ion binding, metalloproteinase activity, zinc ion binding	overexpressed in tumors [29]	ND
CTSK	NM_000396	2	cathepsin activity/proteolysis	associated to tumor invasiveness [30]	ND
DCT	NM_001922	7	dopachrome isomerase activity, oxidoreductase activity/ melanin metabolism	increases proliferation of neuronal cells [31]	melanocyte/melanoma marker; increased in radioresistant melanoma cells [32]
G3BP2	NM_012297	3	RNA binding, receptor signaling complex scaffold activity	overexpressed in breast cancer [33]	ND
GPM6B	NM_001001994	3	molecular function unknown, cell differentiation	ND	ND
HLA-DRA	NM_019111	55	receptor activity, antigen presentation	observed as down-regulated[34] as also as up-regulated in different tumors [35]	prognostic significance of HLA-DR expression in melanoma tumors is not clearly defined [36, 37]
ITGB8	NM_002214	4	receptor activity, cell-matrix adhesion	overexpressed in glioblastoma [38]	ND
ITPR1	NM_002222	3	ion channel activity	ND	ND

LAMA4	NM_002290	2	extracellular matrix constituent, cell adhesion	angiogenesis induction [39]	ND
LOC285628	AL389942	3	unknown	ND	ND
MLANA	NM_005511	2	melanin biosynthesis (non GO)	ND	indicated as melanoma micrometastasis marker [40]
MRPL42	NM_172178	2	structural constituent of ribosome	ND	ND
MTUS1	NM_020749	3	receptor activity	considered tumor suppressor; down-regulated in pancreatic tumor [41]	ND
NRP2	NM_003872	2	receptor activity	expressed in gliomas and neuroblastomas [42]	expressed in melanoma [42]
PDGFRA	NM_006206	2	tyrosine kinase receptor	metastatic potential of oncogenic mammary epithelial cells requires an autocrine PDGF/PDGFR loop [43]	overexpressed in melanoma cells [44]
PLP1	NM_000533	25	structural molecule activity; involved in myelination	overexpressed in leiomyomas [45]	ND
POMP	NM_015932	2	protein folding, immune response	interacting partners of the human papillomavirus 16 transcription/replication factor E2 [46]	ND
RDX	NM_002906	2	actin binding, cytoskeletal anchoring	up-regulated in renal cell carcinoma [47]	ND
SERPINE2	NM_006216	4	serine-type endopeptidase inhibitor activity	overexpressed in pancreatic tumor[48]	ND
SGK	NM_005627	2	protein serine/threonine kinase activity	overexpressed in extraskelatal myxoid chondrosarcomas [49]	ND
SLC5A4	NM_014227	2	symporter activity	ND	ND
SPP1	NM_000582	2	cytokine activity, growth factor activity	involved in tumor progression and metastasis [50]	overexpressed in PTEN mutant melanomas [51]
TDO2	NM_005651	8	tryptophan 2,3-dioxygenase activity	overexpressed in esophageal adenocarcinoma [52]	ND
TM4SF1	NM_014220	10	molecular function unknown, integral to membrane	may be involved in cancer invasion and metastasis [53]	ND
TYR	NM_000372	2	monooxygenase activity; melanin biosynthesis	ND	used as molecular marker for detection circulating melanoma cells [54]

TYRP1	NM_000550	2	monooxygenase activity; melanin biosynthesis	ND	decreases the tyrosinase mediated cell death [55]
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See references in the reference file of the supplementary material
 ND: Not described

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