Supplementary Table – 5: List of Proteins up-regulated in Pb-R-MCF-7 cells and their references.

Up-regulated Protein	Pb-R-MCF-7/MCF-7 fold Change Set-1	Pb-R-MCF-7/MCF-7 fold Change Set-2	Roles of proteins in Cancers therapy resistance as reported	References ID PubMed
S100A7	1.559775841		OLFM4, LY6D and S100A7 as potent markers for distant metastasis in estrogen receptor-positive breast carcinoma. Mayama A. et. Al. 2018.	PMID: 30137688
HSPB1	3.386666667		The nuclear expression of phosphorylated and non-phosphorylated forms of the chaperone HspB1 is a marker of tumor cells associated with lymphatic metastasis of breast cancer.Kaigorodova EV et al 2015.	PMID: 25519015
GAPDH	1.6		Various study have described GAPDH as a regulator of cell death and suggested that GAPDH participates in tumorprogression.Zhang JY et al 2015.	PMID: 25859407
IGHG1	2.428571429		IGHG1 provided high prognostic value in TNBC for both OS and DFS, representing an easily measurable molecular prognostic marker.Yeong J et al 2018	PMID: 29899747
ANXA2	2.241134752		1. AnxA2 is overexpressed in TNBC, implicating AnxA2 as a contributor to the aggressive biology of TNBC in AA women.Gibbs LD et al 2019 2. Tyr23 phosphorylation of Anxa2 enhances STAT3 activation and promotes proliferation and invasion of breast cancer cells. Yuan J et al 2017.	PMID: 30478786 .PMID: 28470457
IGLL5	1.674556213		Rearrangements occurring in IGLL5 might be linked to the process of metastasis. Feng Liang et al 2015	PMID: 26311227
HSPA8	1.569444444		HSPA8 intronic 1541-1542delGT polymorphisms as potential risk factors and/or prognostic markers for breast cancer. Zagouri F et al 2012.	PMID: 23065205
VCL		1.453488372	Vinculin is a cytoskeletal protein associated with cell-cell and cell-matrix junctions. Loss of LSD1 (Tumor suppressor gene) also reduce the expression of VCL gene in breast cancer. Hu X et al 2019	PMID: 31409898
MUC1		1.462264151	The combination therapy based on anti-MUC1 antibody and novel OM-86II inhibited the proliferation of MCF-7 breast cancer cells. Gornowicz A et al 2019.	PMID: 31524251
GAPDHS		1.468619247	GAPDH is a key glycolytic proteins were found with higher expression and poor prognosis. He Y. et al 2019.	PMID: 31184216
P4HB	2.15942029	1.52173913	Prolyl-4-hydrolase beta-isoform (P4HB)) were found to be up-regulated in HER-2/neu-positive breast tumors. Zhang D et al 2005.	PMID: 16048908
H2A	2.175510204	1.669387755	TRIM37 is a breast epithelial oncogene encoding a histone H2A ubiquitin ligase in breast cancer. Hu X et al 2019.	PMID: 31409898
GOT1		1.850746269	Glutamate oxaloacetate transaminase 1 (GOT1) regulates cellular metabolism through coordinating the utilization of carbohydrates and amino acids to meet nutrient requirements. GOT1 is crucial to provide oxaloacetate at low glucose levels, likely to maintain the redox homeostasis. Our data suggest GOT1 as a possible target in cancer therapy.Zhou X et al 2018.	PMID: 29751795
FLNA		1.994584838	FLNa mRNA and protein were overexpressed in breast cancer tissues, which was associated with advanced stage, lymph node metastasis and vascular or neural invasion of breast cancer, suggesting that FLNa contributes to breast cancer development and progression.Tian HM et al 2013.	PMID: 24137390

CD47		2.027472527	High expression of CD47 in triple negative breast cancer is associated with epithelial-mesenchymal transition and poor prognosis.(Yuan J. et al 2019).	PMID: 31452802
PSMA3		2.053571429	Proteasome subunit α type-3 (PSMA3) showed the highest level in plasma of cholangiocarcinoma patients compared to normal and hepatocellular carcinoma patients by immunodetection, and is of interest as a potential biomarker for cholangiocarcinoma. Verathamjamras C. et al 2017.	PMID: 28560424
SERPINC1	1.660243408	2.129817444	Expression levels of SERPINC1 mRNA and protein were increased in NPC tumor tissues compared with in adjacent healthy tissues. Downregulation of SERPINC1 reduced the phosphorylation of phosphatidylinositol 3-kinase (PI3K), protein kinase B (Akt) and mammalian target of rapamycin (mTOR).Xu J. et al 2019.	PMID: 30896875
HIST1H2BN	2.725352113	2.147887324	Hypomethylation of ATG4A and HIST1H2BN in OTICs predicts a poor prognosis for ovarian cancer patients.(Liao YP. Et al 2014).	PMID: 24256813
KRT18		2.391304348	KRT18 gene was highly expressed in DCIS samples with IBC. Doebar SC et al 2017.	PMID: 28634007
RPS27A		2.414666667	UBA52, RPS27A, MAPK1, UBC, and UBB. UBA52, RPS27A, and MAPK1 genes were verified by the bioinformatics analysis to be related to the progression and metastasis of GC.Tian X. et al 2019.	PMID: 31081222
PSMB1		2.416666667	Analyses of the IXA-binding proteasome subunits PSMB5 and PSMB1 show increased PSMB5 expression and activity in all IXA-resistant MM cells, and upregulated PSMB1 expression in IXA-resistant AMO1 cells. Brünnert D et al 2019. In women with early recurrence, we identified seven upregulated genes (TMPRSS4, MASP1/3, SPC18, PSMB1, IGFBP2, CFI - encoding Complement Factor I - and MMP9). Trudel D et al 2019. Genes such as POLR2F/2H, RPS14/15, ITGA7, GRB14, CDC20 and PSMB1 were forecast to play important roles in the occurrence and progression of BC. Jia Z et al 2015.	PMID: 30954557 , PMID: 30987833 PMID: 25702669
SERPINB1	1.5	2.445414847	Elevated expression levels of CLMN, SERPINB1, and KLK6 are associated with prolonged relapse-free survival for breast cancer patients.Sheng L. et al 2016. Inhibitory role of SERPINB1 in the migration and invasion of HCC, implying that SERPINB1 might be a potential prognostic indicator of HCC metastasis.Cui X et al 2014.	PMID: 26485663 PMID: 24105272
HSD17B4	2.207920792	2.693069307	17β-hydroxysteroid dehydrogenase type 4 (HSD17B4) catalyzes the conversion of estradiol (E2) to estrone (E1), and is associated with the pathogenesis and development of various cancers.Zhang Y et al 2017	PMID: 28296597
PSMA6		2.752380952	mRNA expression levels of PSMA1-7 were significantly upregulated in breast, lung, gastric, bladder and head and neck cancer compared with normal tissues.Li Y et al 2017	PMID: 27966459
APOD		2.767346939	ApoD(CN)expression correlated with lymph node metastases. Søiland H et al 2009.	PMID: 18330697
SERPINF2	2.090517241	2.795977011	Alpha-1 antitrypsin (SERPINA1) was identified as candidate biomarkers for early diagnosis of B-ALL, as they were upregulated in the B-cell acute lymphoblastic leukemia. Cavalcante Mde S et al 2016.	PMID: 26823978
SNRPD3		2.80104712	VASN, SNRPD3 genes and gene modules, targeted by POLR2C, CHMP1B and TAF9, which might be novel breast cancer-related biomarkers. Zhang Y et al 2015.	PMID: 26282201
ERMP1		2.970501475	ERMP1 could act as a molecular starter to the survival response induced by extracellular stresses. Grandi A et al 2016. ERMP1 and IL33 are overexpressed independent of	PMID: 27566589 PMID: 21666724

			the copy number increase in breast cancer.Wu J et al 2012.	
IQGAP1	1.882075472	3.066037736	IQGAP1 plays an important role in the cell proliferation and invasion of human breast cancer cells, thus indicating that IQGAP1 may be a potential therapeutic target for the treatment of human breast cancer. Zeng F et al 2018. miR-506 acts as a tumor suppressor, at least partially, by directly downregulating IQGAP1 in breast cancer cells.Sun G et al 2015.	PMID: 29779034 PMID: 26398880
LMNA	5.254545455	3.218181818	lamin A/C plays a role in breast cancer and loss of its expression is associated with variables of poor prognosis and shorter outcome.Alhudiri IM et al 2019.	PMID: 30610489
ETFDH	9.30941704	3.430493274	Expression of RTN4, SON, IGF1R, SNRPE, PTGR1, PLEK, and ETFDH was associated with a decrease in survival time of Bladder cancer patient.Tapak L et al 2015.	PMID: 25907251
KIAA1324	1.575221239	3.469026549	KIAA1324 could be involved in tumor progression and metastasis either by its expression level or through variable expression of alternative splice products. Bauer M et al 2004.	PMID: 14767521
GSR	1.930612245	3.563265306	The BTMG recurrences were noted predominantly in women--carriers of mutant alleles with polymorphism rs8190924 of gene GSR and AA rs3763511--of gene DKK4. Usenko OY et al 2015.	PMID: 26419038
PSMA4		3.580645161	A potential association between PSMA4 variants and lung cancer risk in Chinese Han population.Wang T et al 2015.	PMID: 25744645
SOD2		3.879943503	MiR-509-5p exerted tumor-suppressive effects on breast cancer progression and metastasis via targeting SOD2 in vitro, which provided an innovative and candidate target for diagnose and treatment of breast cancer.Song YH et al 2017.	PMID: 28925482
VTN	2.436578171	3.91740413	VEGFR2 positively regulate the expression of VTN in gastric cancer. VTN promoted the growth and metastasis of gastric cancer cells, VTN act as a poor prognostic factor both for disease-free survival and overall survival in gastric cancer. Lian L et al 2019.	PMID: 30819137
PDIA4		3.923611111	Down-regulated PDIA4 predicted DFS and OS.PDIA4, could be therapeutic targets or biomarkers for managing Ovarian Cancer.Yin F et al 2019.	PMID: 30335894
MDH2		3.952879581	Differential expression pattern for glycolytic enzymes (as for example MDH2, PGK1, TKT, Aldolase1) were found in triple negative breast cancer.Schulz DM et al 2009.	PMID: 19485423
PSMB5		4.142857143	Proteasome subunit beta 5 (PSMB5), the key regulator of proteasome function, was overexpressed in TNBC tissue and predictive of poor prognosis. PSMB5 is associated with proliferation and drug resistance in triple-negative breast cancer. Wei W et al 2018.	PMID: 28623645
NCSTN	1.815686275	4.305882353	Increased NCSTN mRNA levels by RNA in situ hybridization (RNAScope) in a large cohort of oestrogen receptor negative breast cancers, conferring independent prognostic significance for disease-free survival, in multivariate analysis.Filipović A et al 2014.	PMID: 25248409
PM20D1	3.900943396	4.353773585	PM20D1 with hypermethylation of CpG islands may be associated with the energy expenditure of patients with AML. Huang J et al 2018. Increased circulating PM20D1 have augmented respiration and increased N-acyl amino acids in blood, administration of N-acyl amino acids to mice improves glucose homeostasis and increases energy expenditure.Long JZ et al 2016.	PMID: 29207054 PMID: 27374330

ENO1	2.237288136	4.406779661	α-enolase (ENO1) and Myc promoter-binding protein-1 (MBP-1) also played pivotal roles in tumorigenesis, although as antagonists. ENO1 is involved in cell growth, hypoxia tolerance and autoimmune activities besides its major role in the glycolysis pathway.Cancemi P et al 2019. Protein levels of nucleophosmin (NPM), α-enolase (ENO1) and vimentin (VIM) were upregulated in in methotrexate-resistant human breast cancer cells.Chen S. et al 2014.	PMID: 31416219PMID: 24736981
PKM	2.577586207	4.413793103	Pyruvate kinase muscle (PKM) is a rate-limiting enzyme in the final step of glycolysis. Herein, reported that PKM is a potential therapeutic target in triple-negative breast cancer (TNBC) cells and found that PKM1 or PKM2 is highly expressed in TNBC tissues or cells. Ma C et al 2019. Oncoprotein HBXIP induces PKM2 via transcription factor E2F1 to promote cell proliferation in ER-positive breast cancer.Liu BW et al 2019.	PMID: 31564074 PMID: 29925919
HBB	8.461538462	4.692307692	HBB expression increases breast cancer cells aggressiveness and associates with poor prognosis, pointing to HBB as a novel biomarker for breast cancer progression.Ponzetti M et al 2014, Pau Ni IB et al 2010.	PMID: 28772282 PMID: 20097481
LMAN2		4.802761341	High tumor expression of LMAN2, FZD4, FZD5, or STT3A was associated with no significant PFS increase after IP compared to IV chemotherapy in ovarian cancer.Seagle BL et al 2016.	PMID: 26883286
FN1	1.802513465	4.858168761	FN levels were significantly elevated (p< .0001) at all stages of BC, and returned to normal after tumorremoval.Moon PG et al 2016. Knockdown of FN1 reversed mesenchymal morphology, inhibited cell migration and invasion, and sensitized cells to doxorubicin.Yang X et al 2017.	PMID: 27250024 PMID: 28972876
PSMA7		4.986363636	PSMA7 exhibited higher expression levels in HCC patients with poor prognosis than those for lower expression via Kaplan-Meier plotter database. Tu J et al 2009.	PMID: 31303768
HIST1H4A	1.692307692	5.205128205	HIST1H4A was found to be expressed in exosomes at more than 5-fold higher level as compared to total cellular membrane proteins in Non-Small Cell Lung Carcinoma Cells.Pan D et al 2019.	PMID: 30646616
EIF4A2		5.559915164	miR-5195-3p might be a potential therapeutic target to reverse chemoresistance in TNBC through its targeting of EIF4A2. Liu M et al 2019.	PMID: 31308851
NPM1	3.361764706	6.202941176	APE1 and NPM1 protect cancer cells from Pt-compounds cytotoxicity, suggesting a possible improvement of the activity of Pt-based therapy for TNBC, using the NPM1 and APE1 proteins as secondary therapeutic targets. Malfatti MC et al 2019.	PMID: 31307523
FLNB		6.636363636	In alternating splicing, skipping of FLNB exon 30 induced EMT by releasing the FOXC1 transcription factor. Moreover, skipping of FLNB exon 30 is strongly associated with EMT gene signatures in basal-like breast cancer patient samples. Li J et al 2018. Copy number variation in 52% and 47.6% genes showed association with ER+ and PR+ status, respectively. 71% of the genes (including ERBB2, CTSV, CD68, GRB7, MKI67, MMP1, PGR, RPLP0, TFRC, BAG1, BCL2, BIRC5, FLNB, GSTM1 and SCUBE2) showed association with overall survival.(Ahmed W et al 2018).	PMID: 30059005 PMID: 30225582
HSP90B1		6.764705882	The overexpression of Hsp90B1 is associated with tumorigenesis of canine mammary glands. Sunil Kumar BV et al 2018. Proteomic analyses reveal high expression of decorin and endoplasmin (HSP90B1) are associated with breast cancer metastasis and decreased survival.Cawthorn TR et al 2012.	PMID: 28801701 PMID: 22363530
TXNRD1	1.310160428	6.946524064	Overexpression of TXNRD1 is associated with breast cancer progression. Shin B. et al 2019. TXNRD1 and TXNIP are associated with prognosis in breast cancer, and ERBB2	PMID: 31430859 PMID: 20584310

			seems to be one of the factors shifting balances of both factors of the redox control system in a prognostic unfavorablemanner.Cadenas C et al 2010.	
GPD2		8.41576087	Inhibitors of mitochondrial GPD2 activity elicit anti-proliferative effects on cancer cells.Yuan L et al 2018. The shift in the inflammatory response is modulated by GPD2, which coordinates a shutdown of oxidative metabolism and contributes to the suppression of inflammatory responses. Langston PK et al 2019.	PMID: 29808012 PMID: 31384058
PSMA1		9.063157895	mRNA expression levels of PSMA1-7 were significantly upregulated in breast, lung, gastric, bladder and head and neck cancer compared with normal tissues.Li Y et al 2017. Over-expression (>4-fold) of proteins of PSMA1 and SMT3A were observed in breast cancer. tissue. Deng S et al 2007.	PMID: 27966459 PMID: 17004105
PRDX4		9.213043478	Peroxiredoxin 4 has the potential of serving as a novel target for multiple cancers.Jia W et al 2019. High mRNA expression of PRDX4/6 was significantly associated with poor overall survival (OS) in BrCa patients. Mei J et al 2019.	PMID: 31311441 PMID: 31402980
ITGAV		9.524654832	Potential therapeutic targets (MET, ITGAV, and PDGFRβ) are differentially expressed between subtypes.Pepin F et al 2012. WASL, ITGAV and several additional cytoskeleton-associated molecules as novel invasion-promoting targets of miR-142-3p in breast cancer. Schwickert A et al 2015.	PMID: 22906178 PMID: 26657485
ATP1B3		9.671691792	ATP1B3 knockdown significantly inhibited cell proliferation, colony-formation ability, migration, and invasion and increased apoptosis in human gastric carcinoma cell lines. Additionally, knockdown induced cell cycle arrest at the G2/M phase. ATP1B3 silencing decreased the expression of phosphatidylinositol 3-kinase (PI3K), protein kinase B (AKT) and phosphorylated AKT (p-AKT). Li L et al 2017.	PMID: 24236063 PMID: 29137423
VDAC1	2.472222222	9.694444444	VDAC1 promoted breast cancer proliferation and was associated with a poor prognosis in patients with breast cancer. Yang G et al 2019.	PMID: 31452730
MT-CYB	4.955974843	10.01257862	The mitochondrial genes MT-ATP6 and MT-CYB were observed to carry the highest number of variants in the study. The proteins encoded by these genes are involved in the structure of the mitochondrial respiration chain, and variants in these genes may impact reactive oxygen species production contributing to carcinogenesis.Blein S et al 2015. n a progressive increase of MT-COI, MT-CYB, MT-ND1, and MT-RNR1 gene expression in colorectal adenomas and adenocarcinomas when compared to their adjacent normal tissues. Wallace L et al 2016.	PMID: 26406445 PMID: 27333991
GOT2		11.18	Eleven key glycolytic proteins were found with higher expression and poor prognosis: GLUT1, SLC2A5, HK1, PFKP, ALDOA, TPI1, GAPDH, PGK1, ENO1, GOT1 and GOT2. He Y et al 2019. Upregulation of GOT2, increases aspartate and alpha ketoglutarate production, leading to rapid cell proliferation of breast cancer cells. Hong R et al 2019.	PMID: 31184216 PMID: 30714292
GLG1		11.75268817	RBBP6, GLG1, VPS13A, DCTPP1, HSPA9, HSPA4, ALDOA, and KRT18, were up-regulated in both OCUM-12/SP cells and OCUM-2MD3/SP cells when compared to their corresponding parent cells. Morisaki T et al 2014. Up-regulated expression of GLG1 gene not previously associated with pancreatic adenocarcinoma were observed in this study.Crnogorac-Jurcevic T et al 2001.	PMID: 25379943 PMID: 11704875
SLC25A31	4.377088305	12.8353222	ANT4 (SLC25A31) enhanced cell growth without impacting mitochondrial network or respiration. Moreover, ANT4 differentially regulated the intracellular levels of hydrogen peroxide without affecting superoxide anion levels. Finally, stable ANT4 overexpression protected cancer cells from lonidamine and staurosporine apoptosis in a manner	PMID: 20060930

			independent of Bcl-2 expression. Gallerne C et al 2010.	
ITGB1		13.67261905	β1 Integrin is essential for fascin-mediated breast cancer stem cell function and disease progression. Barnawi R et al 2019. CD31 regulates metastasis by inducing epithelial-mesenchymal transition in hepatocellular carcinoma via the ITGB1-FAK-Akt signaling pathway. Zhang YY et al 2018.	PMID: 30719702 PMID: 29746931
FTH1	2.413533835	14.54887218	Up-regulated genes in EMT cells compared to MET cells, was the FTH1 gene, a subunit of the ferritin complex, which is associated with the progression of breast cancer and with increased resistance to doxorubicin.Bigagli E et al 2019. iron up-regulated the expression of FTH1 and increased iron in cancer cells and their microenvironment protects cancer cells from immune response in MCF-7 and MDA-MB-231 cells. Jiang XP et al 2017	PMID: 31018947 PMID: 28476795
FBP1	5.765957447	15.44680851	FBP1 is commonly up-regulated in tumor tissues compared with non-tumor tissues regardless of histological type. elevated FBP1 is a critical modulator in breast cancer progression by altering glucose metabolism and the activity of Wnt/β-Catenin pathway.Li K et al 2016.	PMID: 27780144
RAP1B	1.7375	17.8875	In breast cancer, a decrease in Rap1B prenylation and subsequent loss of Rap1B at the plasma membrane decreases cell-cell adhesion and increases cell scattering, which promotes the metastatic phenotype. Protein kinase A (PKA) was recently found to phosphorylate Rap1B and inhibit its prenylation. Wilson JM et al 2015.	PMID: 26209110
KDELR1	2.324675325	18.46103896	NPAS2 is a risk biomarker in human cancers and plays a role in tumorigenesis by affecting cancer-related gene expression, and relevant biological pathways. NPAS2 promote the expression of KDELR1 gene have a known role in tumorigenesis. Yi CH et al 2009.	PMID: 19457610
LAP3	1.517730496	19.14893617	Leucine aminopeptidase 3 promotes migration and invasion of breast cancer cells through upregulation of fascin and matrix metalloproteinases-2/9 expression.Fang C et al 2019.	PMID: 30417585
HSPA5		20.3125	Elevated expression of heat shock protein 5 (HSPA5) promotes drug resistance and metastasis and is a marker of poor prognosis in breast cancer patients. Chang YW et al 2014.	PMID: 26119938 PMID: 25301734
CS		23.44444444	Higher levels of CS expression was positively correlated with worse overall survival of breast cancer patients. Peng M et al 2019.	PMID: 30850587
HEXA		25.91780822	Increase in both O-GlcNAcase and lysosomal hexosaminidase activity in breast tumor tissue compared to matched adjacent tissue. Slawson C et al 2001. N-acetyl-beta-glucosaminidase (NAG) activity measured in sera from 129 breast cancer patients was elevated (mean 18.2 units/l) compared with that in sera from 28 healthy women. Luqmani Y et al 1999.Breast cancer invasion is mediated by beta-N-acetylglucosaminidase (beta-NAG) and associated with a dysregulation in the secretory pathway of cancer cells. Ramessur KT et al 2010.	PMID: 11566258 PMID: 10427956 PMID: 21294446
SEC11A		29.31707317	Signal peptidase complex 18, encoded by SEC11A, contributes to progression via TGF-α secretion in gastric cancer.Oue N et al 2019. SEC11A Expression Is Associated with Basal-Like Bladder Cancer and Predicts Patient Survival.Shigematsu Y et al 2019	PMID: 31175341 PMID: 31163419
RPIA		30.825	Deregulation of ribose-5-phosphate isomerase A (RPIA) in the pentose phosphate pathway (PPP) is known to promote tumorigenesis in liver, lung, and breast tissues.	

SERPINH1		36.55172414	HSP47 is encoded by the SERPINH1 gene, the altered expression levels of HSP47 have been correlated with several types of cancer, such as cervical, breast, pancreatic and gastric cancers. Studies have shown that HSP47 promotes tumor angiogenesis, growth, migration and metastatic capacity. Duarte BDP et al 2018.Clinically, increased expression of Hsp47 and reduced levels of miR-29b and -29c were associated with poor survival outcomes in breast cancer patients. Zhu J et al 2015.	PMID: 30128672 PMID: 25744716
VIM	376.5	38	In tumors, EMT-like transitions may signify a metastatic phenotype and have features in common with cancer stem cells (CSC) which show resistance to chemotherapy. Vimentin expression in tumor cells, fibronectin and MMP-11 in were reliable markers of EMT. Lakhtakia R et al 2017.	PMID: 28526992
SLC38A1		39.45945946	The cross-talk between Akt signaling and SNAT1/SLC38A1 might play a critical role in the development and progression of breast cancer. SNAT1 was up-regulated in breast cancer cell lines and breast cancer tissues.Wang K et al 2013.	PMID: 23848995
SLC1A5	3.166666667	41.27272727	The neutral amino acid transporter solute carrier family 1 member 5 (SLC1A5 or ASCT2) is overexpressed in many cancers. Bröer A et al 2019.	PMID: 30635397
AHCY		80.57142857	Down-regulation of AHCY effectively suppressed cell proliferation by regulating the MEK/ERK signaling pathway and through cell cycle arrests at G2/M phase. Park SJ et al 2015.	PMID: 26328244
CTSZ	5.103448276	147.6206897	Double deficiency of Ctsb and Ctsz exerts significant synergistic anticancer effects, whereas the single deficiencies demonstrate at least partial reciprocal compensation.	