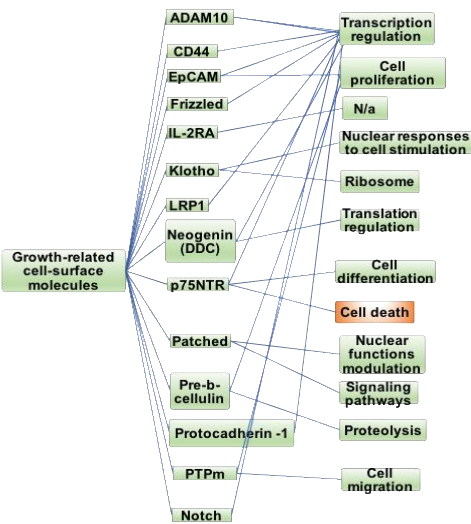


Supplementary data for

Systematic analysis of NLMP suggests nuclear localization of RTK/MET kinases resemble cancer cell clearance



Supplementary table 1 Nuclear localized membrane proteins were searched from the literatures of PubMed and google scholar and analyzed with biological functions.

RTK family Name	Drug resistance tested pathway	Nuclear localization	Reference	Poorer Patients' Survival (nuclear vs membrane)	Reference
ErbB (spec. EGFR)	Akt, MET	+	(Jacobsen et al., 2017)	Nuclear	(Lo et al., 2005)
	Ras, c-Met, HER2, IGF1R, FGFR1		(Xu et al., 2017)		
Insulin	Akt	+	(Qi et al., 2018)	Nuclear	(Aleksic et al., 2010)
	P38MAPK/PGC-1 α /GLUT4		(Penghua et al., 2018)		
PDGF	PI3K/Akt	+	(Ding et al., 2010)	NA	-
VEGF	PI3K/Akt/mTOR/HIF1 α	+	(Jui-Ling, et al., 2016)	Nuclear	(El-Chemaly et al., 2014)
FGF	TYK2, Erk1/2, Bcl-2	+	(Carmo et al., 2011)	Nuclear	(Zhou et al., 2015)
PTK7	Wnt, Akt	+	(Berger et al., 2017)	Nuclear	(Ataseven et al., 2013)
Trk	PKC, Ras/MAPK/PI3	+	(Bonacchi et al., 2008 Jang et al., 2017)	Membrane	(Ray et al., 2004)
Ror	NF-kB, TGF-B,LXR	+	(Ror et al., 2009)	Nuclear	(Rebagay et al., 2012)
MuSK	Dok-7, Rac, Rho	-	(Burden et al., 2013)	Membrane	(Chen et al., 2017)
Met	GRB2, HGF, TGF-b	+	(Li et al., 2017 Sun et al., 2017)	Nuclear	(Pectasides et al., 2014)
Axl	PI3K/Akt, Src/MAPK/ERK pathways	+	(Lu et al., 2016)	Membrane	(Gay,Balaji and Byers, 2017)
Tie	Ang-1/Tie-2 signaling pathway	+	(Carpenter & Liao,2013 Tang et al.,2016)	Membrane	(Tang et al.,2016)
Eph	HRAS-Erk, PI3 kinase-Akt and Abl-Crk pathways	+	(Pasquale, 2010)	Nuclear	(Husa et al.,2016)
Ret	ERK and AKT	+	(Bagheri-Yarmand et al.,2015)	Membrane	(Chang et al., 2017)
Ryk	Wnt	+	(Carpenter & Liao, 2013)	Nuclear	(Green et al., 2014)
DDR Discoidin Domain Receptors (DDRs 1 and 2)	DDR1: Ras/Ra//ERK and protein kinase C dependent pathways; DDR2: phospho-JAK2 recruitment to DDR2 and ERK1/2 activation,Wnt5a/Frizzled, Notch1	+	(Valiathan et al., 2012)	NA	(Ford et al., 2007) (Toy et al., 2015)
Ros	STAT3 PI3K/AKT/m-TOR	+	(Cheng et al., 2015)	Equal	(Cheng et al., 2015)
ALK anaplastic lymphoma kinase	phospholipase C γ , JAK/STAT, PI3K-AKT, mTOR, sonic hedgehog, JUNB, CRKL-C3G,RAP1 GTPase and MAPK	NA	(Reshetnyak et al. 2015) (Zhao Z et al., 2015)	NA	(Liu et al. 2016)
STYK1	MEK/ERK and PI3K/AKT pathway	NA	(Zhao, 2017)	Membrane	(Wang et al., 2016)

Supplementary table 2: Drug resistance pathways and survival rate dependence on nuclear localization in RTKs. This table reveals different receptor tyrosine kinase (RTK) families and pathways by which they induce drug resistance. The RTKs with localization to nucleus are indicated with “+” sign. The survival rate of patients was assessed by using PubMed database, where we entered the following keywords as “nuclear translocation/localisation of ... in patients, clinical data”. This allowed us to observe the relation between the translocation of proteins and survival rate. NA states for the absence of evidence regarding particular criteria.

References (Relates to Fig 1, tableS1, Fig 7, and Table S2):

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