Supplemental Material

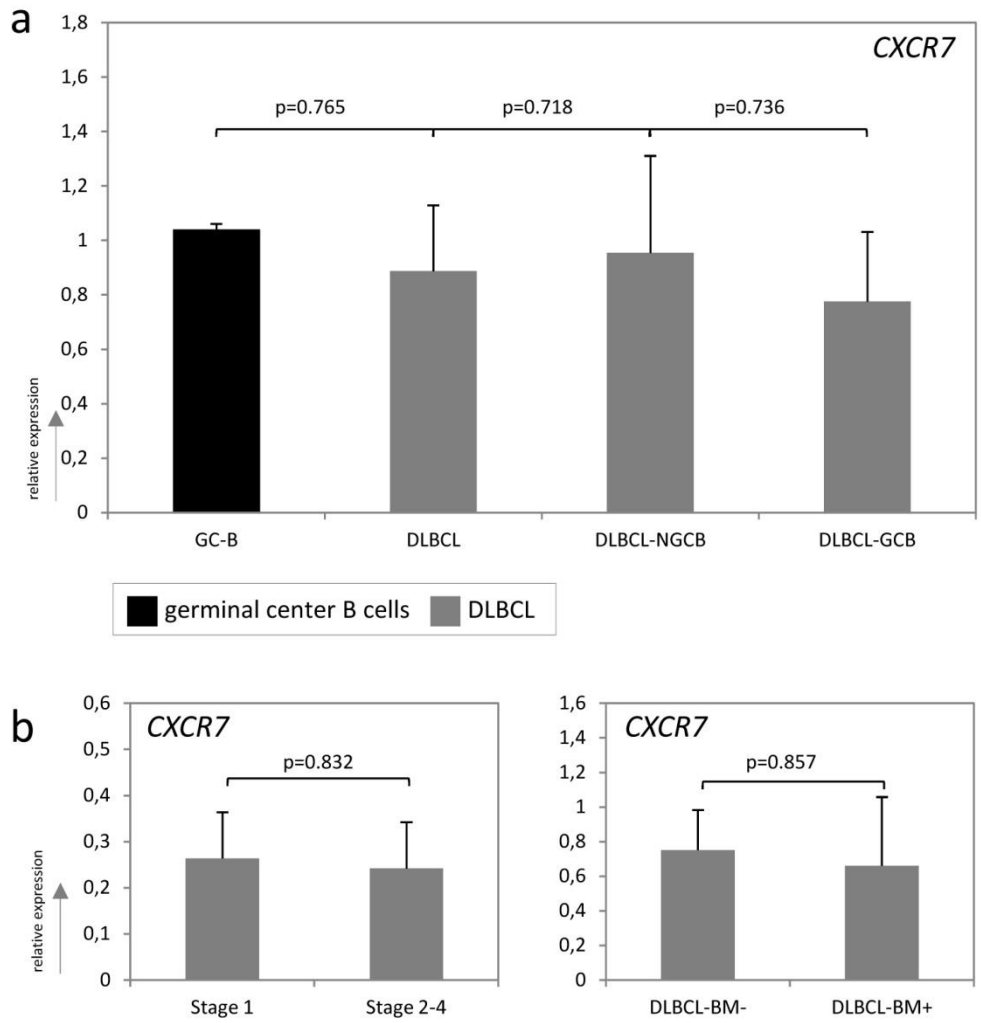

Figure S1: *CXCR7* expression in DLBCL: (a) Expression analysis of *CXCR7* in non-neoplastic control germinal centre B cells (GC-B) and diffuse large B cell lymphoma cells (DLBCL) by RQ-PCR. (b) Expression analysis of *CXCR7* in DLBCL samples with early (stage 1) and advanced stage (stage 2-4) (left graph) and DLBCL samples with and without bone marrow infiltration (right graph) by RQ-PCR. mRNA expression levels were calculated as relative expression in comparison to GC-B cells. Each bar represents the mean values of expression levels ± standard error of the mean (SEM). The comparison of the expression levels was performed by using the Mann-Whitney U-test or Student's t-test.

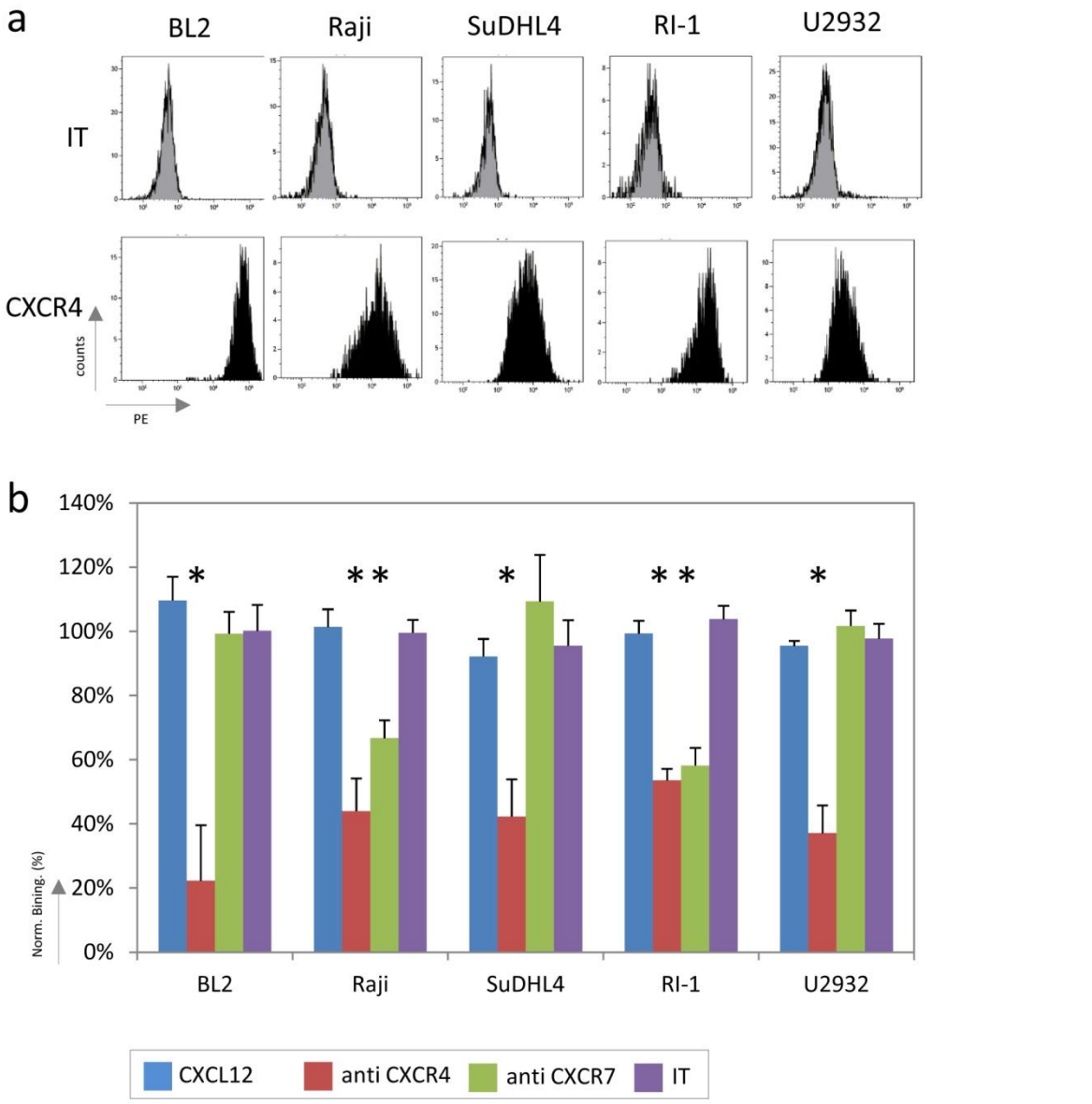

Figure S2: CXCR4 expression and CXCL12^{AF647} binding: (a) Surface expression of CXCR4 on SuDHL4, RI-1, U2932, BL2 and Raji cell lines as determined by flow cytometry. (b) Percentage of CXCL12^{AF647} binding in the presence and absence of blocking antibodies against CXCR4 and CXCR7 as determined by flow cytometry. CXCL12 is bound by CXCR4 in all cell lines examined, while it is also bound by CXCR7 on Raji and RI-1 cells. * indicates significant reduction of CXCL12^{AF647} binding in the presence of antibodies against CXCR4 or CXCR7 compared to binding isotype controls ($p<0.01$).

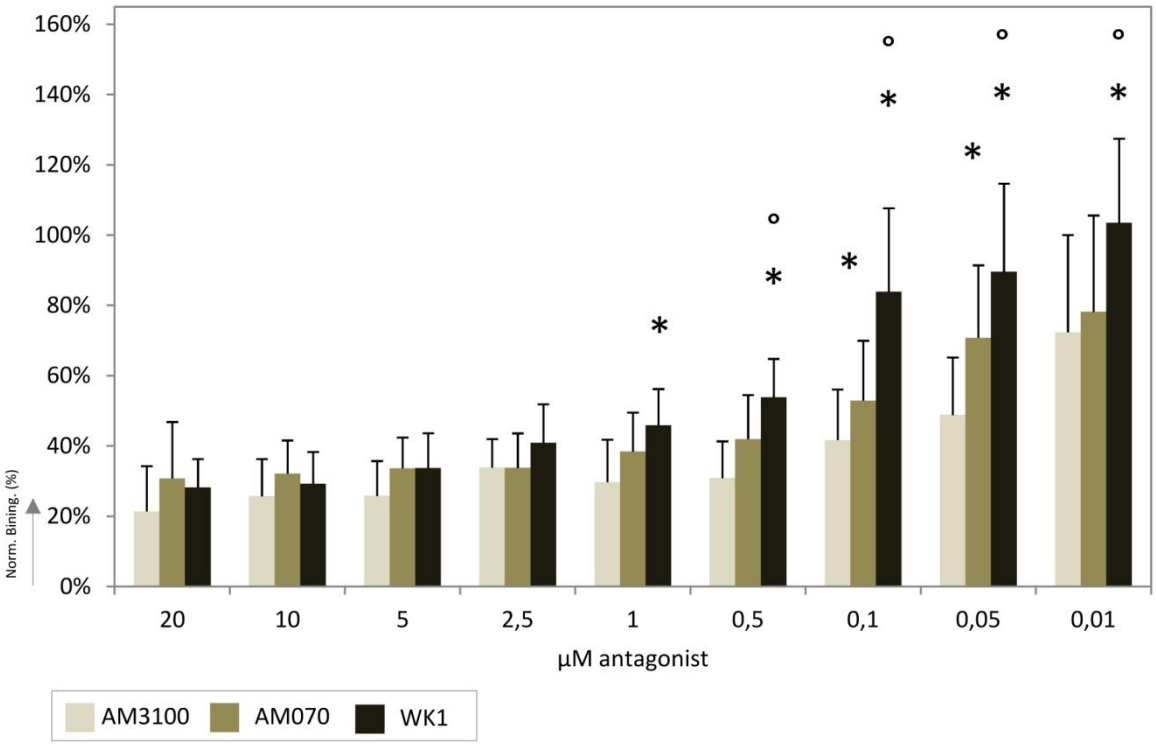

Figure S3: CXCR4 antagonists and CXCL12^{AF647} binding. Percentage of CXCL12^{AF647} binding in the presence of AMD3100, AMD070 and its niacin derivate WK1 on BL2 cells. CXCL12^{AF647} binding to CXCR4 is inhibited by all three antagonists tested. * indicates significant differences of CXCL12^{AF647} binding in the presence of AMD070 and WK1, respectively, in comparison to AMD3100 ($p<0.01$). ° indicates significant differences of CXCL12^{AF647} binding in the presence of WK1 in comparison to AMD070 ($p<0.05$).

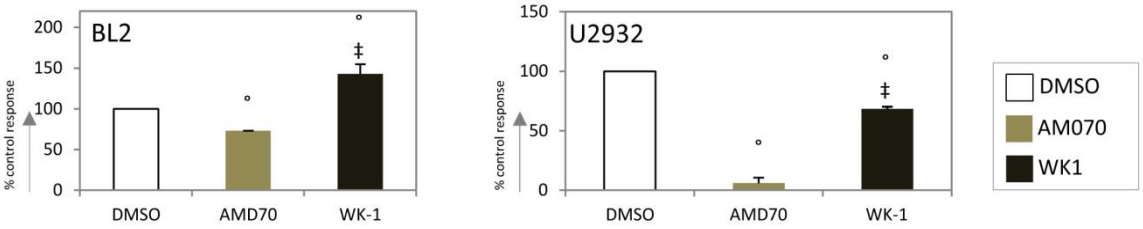

Figure S4: CXCR4 antagonists and transmigration. Percentage of transmigration of BL2 (left chart) and U2932 (right chart) cells in the presence of AMD070 and its niacin derivate WK1, respectively, in comparison to transmigration with DMSO as control. Transmigration was inhibited in both cell lines using AMD070 while inhibition by WK1 was not that efficient. °indicates significant inhibition of transmigration compared to DMSO control ($p<0.05$). ‡ indicates significantly lower inhibition of WK1 compared to AMD070 ($p<0.05$).

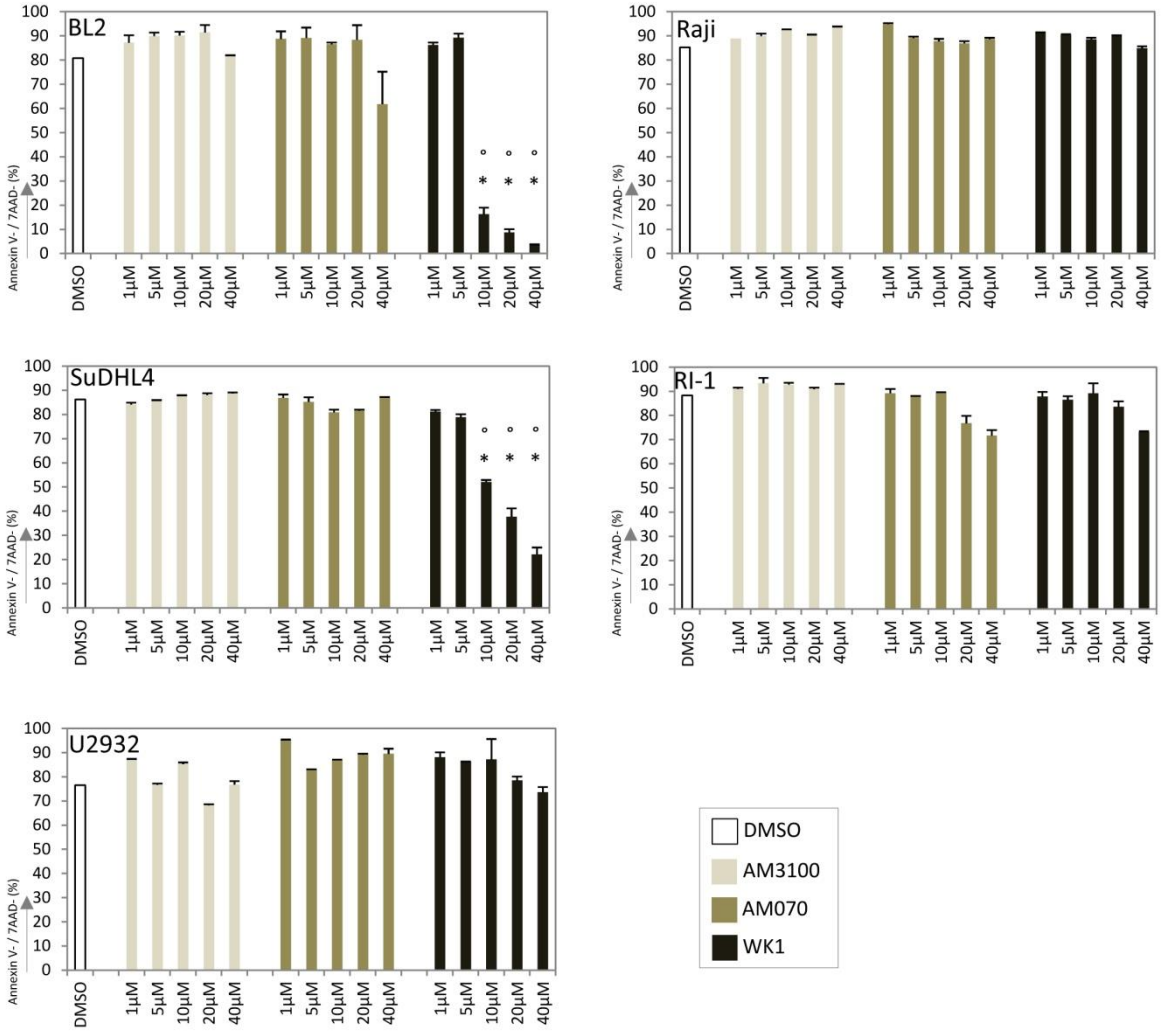

Figure S5: CXCR4 antagonists and cell viability. Percentage of Annexin V/ 7AAD positive SuDHL4, RI-1, U2932, BL2 and Raji cell lines in the presence of increasing concentrations of AMD3100, AMD070 and its niacin derivate WK1 as determined by flow cytometry and compared to DMSO treated control cells. Only treatment of BL2 and SUDHL4 cells with 10µM, 20µM and 40µM WK1 leads to a decrease in viable, Annexin V/ 7AAD negative, cells, while all other cell lines or antagonists show no effect. * indicates significantly reduced viability compared to AMD3100 ($p<0.05$). ° indicates significantly reduced viability compared to AMD070 ($p<0.05$).

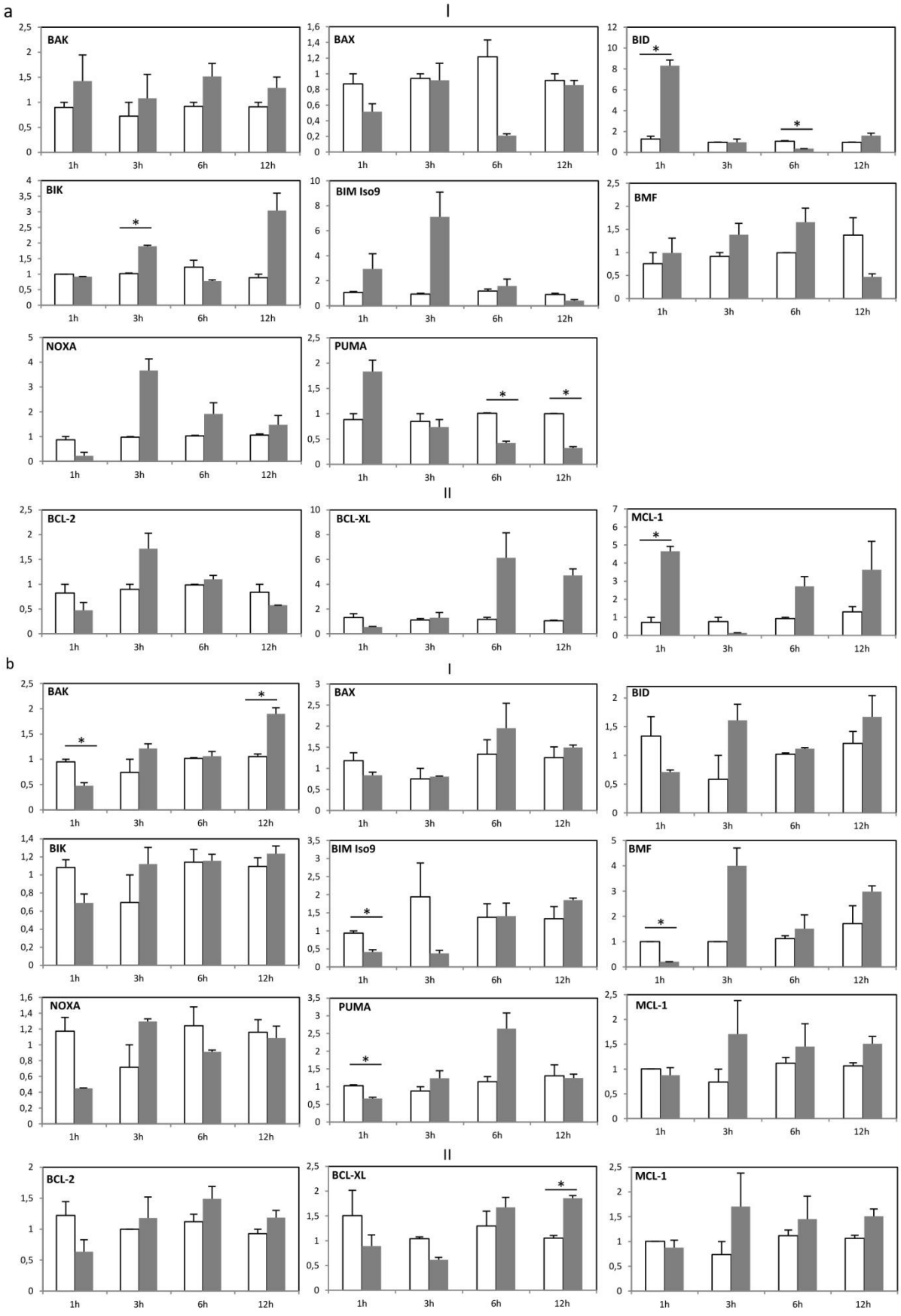
a
I
BAK
BAX
BID
BIK
BIM Iso9
BMF
NOXA
PUMA
II
BCL-2
BCL-XL
MCL-1
b
I
BAK
BAX
BID
BIK
BIM Iso9
BMF
NOXA
PUMA
MCL-1
II
BCL-2
BCL-XL
MCL-1
1h
3h
6h
12h
*

Figure S6: Gene expression of pro- and anti-apoptotic BCL2 member upon treatment AMD3100. (a) BL2 and (b) U2932 cells were treated with 40µM AMD3100 and after 1h, 3h, 6h and 12h gene expression levels of (I) pro-apoptotic and (II) anti-apoptotic BCL2 members were determined by RQ PCR. mRNA expression levels were calculated as relative expression in comparison to DMSO treated controls. Each bar represents the mean values of expression levels ± standard error of the mean (SEM). The comparison of the expression levels was performed by using the Mann-Whitney U-test or Student's t-test.

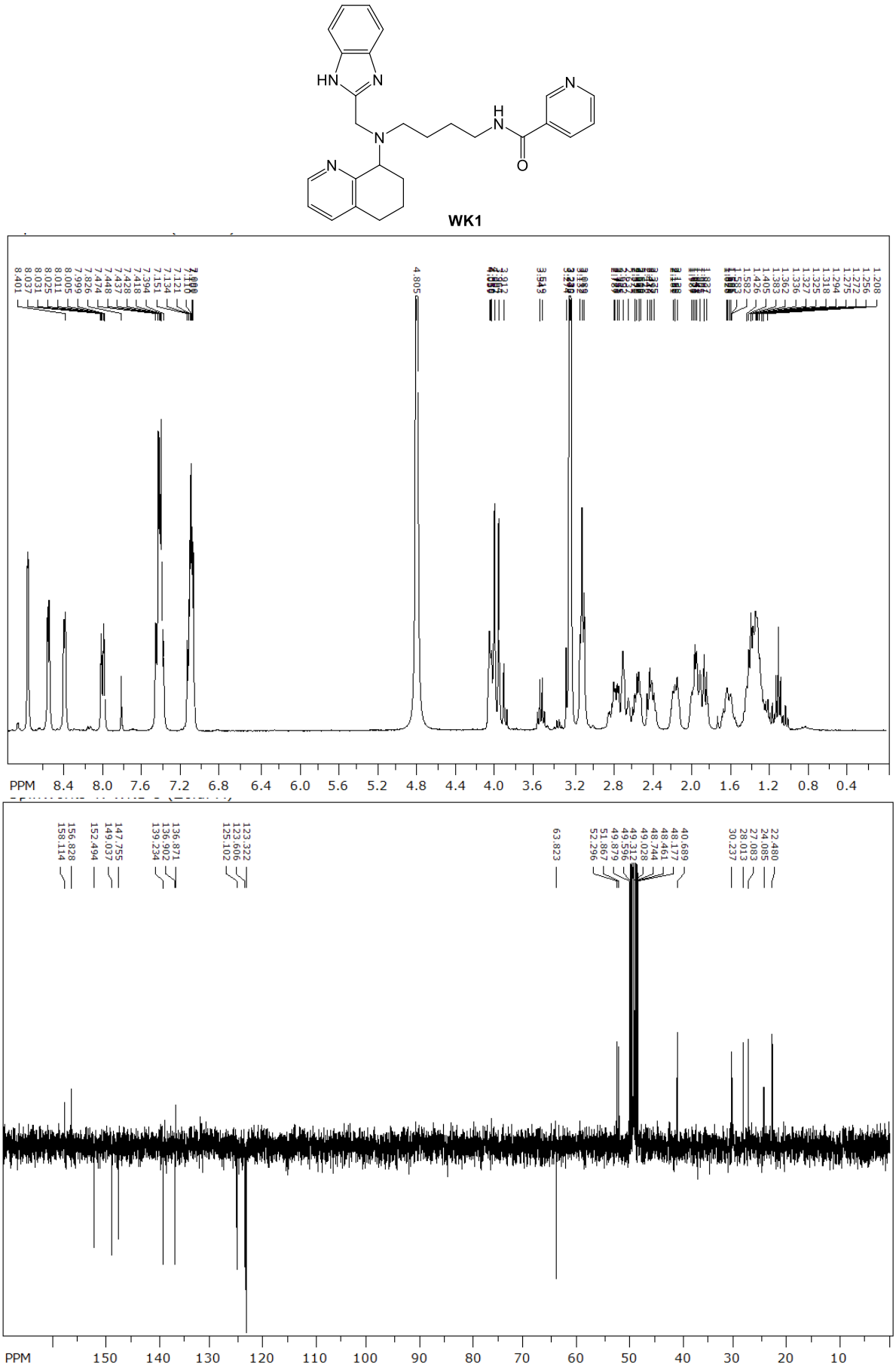

Figure S7: Chemical structure and NMR Spectra of WK1

Table S1: Oligonucleotide sequences of used primers

GAPDH3428-f	AAG GTC GGA GTC AAC GGA TTT
GAPDH3428-r	ACC AGA GTT AAA AGC AGC CCT G
HPRT1-f	ATG GGA GGC CAT CAC ATT
HPRT1-r	ATG TAA TCC AGC AGG TCA GCA A
PPIA-f	CTC CTT TGA GCT GTT TGC AG
PPIA-r	CAC CAC ATG CTT GCC ATC C
CCL22	Qiagen #QT00089817
CCR7	Qiagen #QT01666686
CD44	Qiagen #QT00073549
IL10	Qiagen #QT00041685
MMP2	Qiagen #QT00088396
FN1	Qiagen #QT00038024
COL1A	Qiagen #QT00037793
CFLAR	Qiagen #QT00064554
ADARB	Qiagen #QT00081655
EGR3	Qiagen #QT00246498
cFOS	Qiagen #QT00007070
BUB1	Qiagen #QT00082929
MXD1	Qiagen #QT00082915
JUNB	Qiagen #QT00201341
cJUN	Qiagen #QT00242956
ETV5	Qiagen #QT00009485
DUSP1	Qiagen #QT00036638
CCL3-f	CTC CAA GCC CGG TGT CAT CT
CCL3-r	TTC TGG ACC CAC TCC TCA CT GG
CCL4-f	TAT GAG ACC AGC AGC CTC TG
CCL4-r	GCT TCT TTT GGT TTG GAA TAC C
KLF10-f	ATG CTC AAC TTC GGT GCC T
KLF10-r	TTC CAT TCT TTC CTC CGC
OAS3-f	CTG GTG TCC ACA GCC CTG AA
OAS3-r	TGC CAG AAC TGA GCT GCC C
RGS1-f	AAC TTC TTG CCA ACC AAA CTG
RGS1-r	CAA GCC AGC CAG AAC TCA
TNF-f	AAG CCT GTA GCC CAT GTT GTA G
TNF-r	AGA TGA GGT ACA GGC CCT CTG A
BCL2A1-f	CAC AGG AGA ATG GAT AAG GCA A
BCL2A1-r	TGA TTG TGC CAT TTC CCC C
BAD-f	GGT AGG AGC TGT GGC GAC T
BAD-r	CAA GCA TCA TCG CCA GG
PUMA-f	CGG AGA CAA GAG GAG CA
PUMA-r	ATG ATG AGA TTG TAC AGG ACC
BAX-f	CCT TTT CTA CTT TGC CAG CAA AC
BAX-r	GAG GCC GTC CCA ACC AC
BCL-XL-f	CAG TGA CCT GAC ATC CCA GC
BCL-XL-r	CCC ATA GAG TTC CAC AAA AGT ATC C
BCL-2-f	GGA GGA TTG TGG CCT TCT TTG
BCL-2-r	GCC GGT TCA GGT ACT CAG TCA T
MCL-1-f	CCA AGG ACA CAA AGC CAA TG
MCL-1-r	AAG AAC TCC ACA AAC CCA TCC
BIK-f	CTT GAT GGA GAC CCT CCT GTA TG
BIK-r	AGG GTC CAG GTC CTC TTC AGA
BAK-f	ATGGTCACCTTACCTCTGCAA

BAK-r	TCATAGCGTCGGTTGATGTCG
BIM Isoform 9-f	AAC CAC TAT CTC AGT GCA ATG G
BIM Isoform 9-r	TTG ACT ATG GTG GTG GCC A
BID-f	GGA ACC GTT GTT GAC CTC AC
BID-r	GAG GAG CAC AGT GCG GAT
BMF-f	TTC AAA GCA AGG TTG TGC AG
BMF-r	TTG TGG GGT GAC TGA GGA AC
NOXA-f	AGC TGG AAG TCG AGT GTG CT
NOXA-r	TCC TGA GCA GAA GAG TTT GGA
CXCR4	Qiagen #QT00223188
CXCR7	Qiagen #QT00069650
CXCL12	Qiagen #QT01008133