**Table S3. Best-fit KD values and 95% confidence intervals1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Bcl-xL** | | | **Bcl-w** | | | **Bcl-2** | | | **Mcl-1** | | | **Bfl-1** | | |
| **PXT1** | **8** | *6* | *11* | **5** | *4* | *6* | **14** | *12* | *16* | **0.9** | *0.5* | *1.5* | **1** | *0.6* | *1.5* |
| **C6orf222** | **5** | *5* | *6* | **13** | *11* | *15* | **0.3** | *0.1* | *1.3* | **23** | *19* | *27* | **1** | *1* | *1.5* |
| **MCF2L** | **4** | *2* | *6* | **7** | *5* | *9* | **6** | *5* | *8* | X4000 | ***NA*** | ***NA*** | X4100 | ***NA*** | ***NA*** |
| **NBEAL2** | **10** | *9* | *11* | **29** | *24* | *35* | **16** | *13* | *19* | 3806 | *1979* | *7323* | 3273 | *1134* | *9453* |
| **SLC19A1** | 1458 | *694* | *3065* | **18** | *15* | *21* | **237** | *156* | *361* | **22** | *19* | *27* | **182** | *159* | *211* |
| **SPNS12** | **96** | *36* | *261* | **871** | *86* | *8820* | **28** | *15* | *54* | **19** | *7* | *50* | **278** | *101* | *760* |
| **SNTG2** | X4000 | ***NA*** | ***NA*** | X6562 | ***NA*** | ***NA*** | X3045 | ***NA*** | ***NA*** | **22** | *20* | *41* | X4068 | ***NA*** | ***NA*** |
| **POFUT2** | **39** | *37* | *43* | **98** | *60* | *163* | **98** | *90* | *107* | >104 | *6707* | *>105* | X 2280 | ***NA*** | ***NA*** |
| **PURB** | >105 | *>104* | *>106* | X1800 | ***NA*** | ***NA*** | **34** | *27* | *45* | X4000 | ***NA*** | ***NA*** | X4665 | ***NA*** | ***NA*** |
| **CASP3** | **295** | *211* | *413* | **64** | *53* | *79* | **264** | *145* | *481* | 1190 | *675* | *2099* | **43** | *35* | *54* |
| **TERT** | 1138 | *681* | *1904* | 992 | *773* | *1274* | **49** | *38* | *64* | **69** | *52* | *94* | **99** | *81* | *122* |
| **PCNA** | X104 | ***NA*** | ***NA*** | >104 | ***NA*** | ***NA*** | >105 | ***NA*** | ***NA*** | **59** | *51* | *69* | X104 | ***NA*** | ***NA*** |
| **MCF2L2** | **292** | *153* | *556* | 1116 | *819* | *1523* | **60** | *56* | *65* | X4000 | ***NA*** | ***NA*** | X3367 | ***NA*** | ***NA*** |
| **FOLH1** | **483** | *391* | *599* | 907 | *712* | *1156* | **70** | *61* | *81* | X 4000 | ***NA*** | ***NA*** | 1600 | *1172* | *2185* |
| **FOXJ2** | **103** | *79* | *134* | **85** | *65* | *113* | **130** | *70* | *242* | >104 | *2776* | *>104* | X3367 | ***NA*** | ***NA*** |
| **TXNDC11** | 1486 | *1346* | *1639* | **249** | *220* | *282* | **86** | *76* | *97* | 2379 | *2112* | *2681* | >104 | *7642* | *>105* |
| **TRPM7** | 679 | *567* | *814* | 2489 | *397* | *>104* | **124** | *115* | *135* | 592 | *432* | *812* | 1904 | *443* | *8188* |
| **DDX4** | X4000 | ***NA*** | ***NA*** | X4350 | ***NA*** | ***NA*** | X3045 | ***NA*** | ***NA*** | **142** | *119* | *170* | X3367 | ***NA*** | ***NA*** |
| **MRPL41** | 1239 | *1107* | *1389* | 4324 | *2109* | *8867* | **191** | *156* | *236* | >105 | *>104* | *>106* | X4665 | ***NA*** | ***NA*** |
| **MINA** | 1006 | *933* | *1086* | 1232 | *951* | *1596* | **266** | *231* | *307* | >104 | *5494* | *>105* | 1134 | *542* | *2005* |
| **RTEL1** | 1377 | *1112* | *1705* | >105 | *4503* | *>106* | **342** | *169* | *697* | X4000 | ***NA*** | ***NA*** | X4000 | ***NA*** | ***NA*** |
| **TRIM583** | 4552 | *467* | *>104* | **361** | *133* | *984* | 975 | *805* | *1182* | X6071 | ***NA*** | ***NA*** | X4665 | ***NA*** | ***NA*** |
| **NUB1** | 2715 | *1938* | *3807* | X4000 | ***NA*** | ***NA*** | 562 | *528* | *600* | X104 | ***NA*** | ***NA*** | X4000 | ***NA*** | ***NA*** |
| **PLEKHH1** | 650 | *441* | *960* | 1398 | *726* | *2694* | 1500 | *1101* | *2045* | 977 | *741* | *1290* | X5680 | ***NA*** | ***NA*** |
| **ARHGAP44** | 3063 | *428* | *>104* | 749 | *611* | *919* | 6091 | *1457* | *>104* | X2429 | ***NA*** | ***NA*** | X5595 | ***NA*** | ***NA*** |
| **BCAR1** | 2538 | *2157* | *2987* | 3608 | *2088* | *6235* | 2987 | *1459* | *6117* | 912 | *818* | *1018* | 4685 | *835* | *>104* |
| **VCAM1** | X7000 | ***NA*** | ***NA*** | X4350 | ***NA*** | ***NA*** | X3045 | ***NA*** | ***NA*** | 1139 | *887* | *1463* | X3368 | ***NA*** | ***NA*** |
| **MYCBP2** | > 104 | *>104* | *>104* | 4065 | *920* | *>104* | 1181 | *1015* | *1375* | X104 | ***NA*** | ***NA*** | X3370 | ***NA*** | ***NA*** |
| **TUBB4Q** | 2054 | *826* | *5108* | 2492 | *844* | *7361* | 1409 | *319* | *6231* | 1463 | *393* | *5449* | X4665 | ***NA*** | ***NA*** |
| **CCH** | X5723 | ***NA*** | ***NA*** | 1915 | *698* | *5258* | 7133 | *3459* | *>104* | X4000 | ***NA*** | ***NA*** | X9615 | ***NA*** | ***NA*** |
| **NPLOC4** | >105 | *4580* | *>106* | X4500 | ***NA*** | ***NA*** | 2058 | *1085* | *3905* | X4000 | ***NA*** | ***NA*** | X4665 | ***NA*** | ***NA*** |
| **FBXO30** | >104 | *9140* | *>104* | 3282 | *1792* | *6011* | 2564 | *1266* | *5193* | >104 | *4350* | *>105* | >104 | *>104* | *>105* |
| **SOS2** | X6900 | ***NA*** | ***NA*** | 5379 | *1676* | *>104* | 3286 | *1264* | *8545* | X4000 | ***NA*** | ***NA*** | X3294 | ***NA*** | ***NA*** |
| **SPTAN1** | X7000 | ***NA*** | ***NA*** | X4350 | ***NA*** | ***NA*** | X3045 | ***NA*** | ***NA*** | 3849 | *2225* | *6659* | X3370 | ***NA*** | ***NA*** |
| **AGBL2** | X4000 | ***NA*** | ***NA*** | 5868 | *3081* | *>104* | >105 | *>104* | *>106* | X5025 | ***NA*** | ***NA*** | X4665 | ***NA*** | ***NA*** |
| **SYT1** | X6900 | ***NA*** | ***NA*** | X4350 | ***NA*** | ***NA*** | >105 | *4679* | *>106* | X4000 | ***NA*** | ***NA*** | X3367 | ***NA*** | ***NA*** |

**1**Best-fit KD values determined by combining all replicate titration curves and fitting to a direct binding model (see Methods). The standard devation of the KD fit parameter was converted to a student t-value to account for the small number of data points and the 95% confidence interval was taken from a t-distribution. The first value listed is the KD and the next two values are the upper and lower bounds of the 95% confidence interval. Values in blue mark best-fit KD values for which the upper-limit of the 95% confidence interval is less than 500 nM. If the best fit KD is greater than 104 nM, the KD is colored red. Values with an X followed by a number indicate the highest concentration (the number, in nM) for which signal was measured yet no binding was detected.

2SPNS1 values are from fitting the raw fluorescence data (see Methods)

3Upper baseline signal is low and close to the lower baseline for Bcl-w binding.

4Fitting the raw fluorescence signal suggested lower KD values for Bfl-1 binding, but the data was very noisy.