

## Supplementary Data

**Supplementary Table 1.** Obatoclax induces apoptosis in primary CD34 (+) AML samples. 7 primary samples were treated with increasing concentrations of obatoclax, and % specific apoptosis was calculated as described in the Materials and Methods.

<b>OBX concentration</b>	<b>Average %CD34+AnnexinV+ (specific apoptosis)</b>	<b>SEM</b>
<b>250 nM</b>	<b>16.0</b>	<b>4.8</b>
<b>500 nM</b>	<b>23.1</b>	<b>5.3</b>
<b>1 <math>\mu</math>M</b>	<b>35.9</b>	<b>8.6</b>
<b>2.5 <math>\mu</math>M</b>	<b>48.1</b>	<b>9.4</b>
<b>5 <math>\mu</math>M</b>	<b>62.5</b>	<b>8.8</b>
<b>10 <math>\mu</math>M</b>	<b>73.5</b>	<b>8.4</b>

**Supplementary Table 2.** – Various concentrations at a fixed ratio of 1:1 of obatoclax and AraC were added to OCI-AML3 cells, HL-60 cells (0.1µM, 0.25µM, 0.5µM, 1µM, 2.5µM), or blast cells from 4 primary AML samples (0.5µM, 1µM, 2.5µM) for 48 h, and CI values for attaining Annexin V – positivity were calculated as described in Materials and Methods. The averaged combination index (CI) values were calculated from the ED<sub>50</sub>, ED<sub>75</sub> and ED<sub>90</sub>.

Cell line	Drugs			CI values for % annexinV (+)			
	OBX	AraC	ABT-737	ED50	ED75	ED90	Average CI value (±SEM)
<b>OCI-AML3</b>	<b>X</b>	<b>X</b>		<b>0.44</b>	<b>0.35</b>	<b>0.30</b>	<b>0.36±0.04</b>
<b>HL60</b>	<b>X</b>	<b>X</b>		<b>0.12</b>	<b>0.048</b>	<b>0.018</b>	<b>0.062±0.030</b>
<b>Primary AML #11</b>	<b>X</b>	<b>X</b>		<b>0.96</b>	<b>0.66</b>	<b>0.45</b>	<b>0.69±0.18</b>
<b>Primary AML #12</b>	<b>X</b>	<b>X</b>		<b>0.74</b>	<b>0.31</b>	<b>0.14</b>	<b>0.40±0.22</b>
<b>Primary AML #13</b>	<b>X</b>	<b>X</b>		<b>0.87</b>	<b>0.30</b>	<b>0.13</b>	<b>0.43±0.27</b>
<b>Primary AML #14</b>	<b>X</b>	<b>X</b>		<b>0.54</b>	<b>0.30</b>	<b>0.18</b>	<b>0.34±0.13</b>
<b>OCI-AML3</b>	<b>x</b>		<b>X</b>	<b>0.35</b>	<b>0.30</b>	<b>0.25</b>	<b>0.30±0.03</b>