

Molecular Engineering of Curcumin, an Active Constituent of *Curcuma longa* L. (Turmeric) of the Family *Zingiberaceae* with Improved Antiproliferative Activity

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Supplementary Information

Antiproliferative activity

The anticancer screening was carried out as per the NCI US protocol [1-5]. Using the seven absorbance measurements (time zero, (T_i), control growth, (C), and test growth in the presence of drug at the five concentration levels (T_f)), the percentage growth was calculated at each of the drug concentrations level as $[(\frac{T_f - T_i}{C - T_i}) \times 100]$ for concentrations for which $T_f \geq T_i$, and $\frac{T_f - T_i}{T_i} \times 100$ for concentrations for which $T_f < T_i$.

Three-dose response parameters (GI_{50} , TGI, and LC_{50}) were calculated for each of the experimental agents. Growth inhibition of 50% (GI_{50}) was calculated from $100 \times \frac{T_f - T_i}{C - T_i} = 50$, , which was the drug concentration resulting in a 50% reduction in the net protein increase (as measured by sulforhodamine B, SRB staining) in control cells during the drug incubation. The total growth inhibition (TGI) was calculated from $T_f = T_i$, which was the drug concentration resulting in total growth inhibition and signified the cytostatic effect. The LC_{50} was calculated from $100 \times \frac{T_f - T_i}{C - T_i} = -50$, , indicating a net loss of cells following treatment which indicated the concentration of drug resulting in a 50% reduction in the measured protein at the end of the drug treatment as compared to that at the beginning.

References

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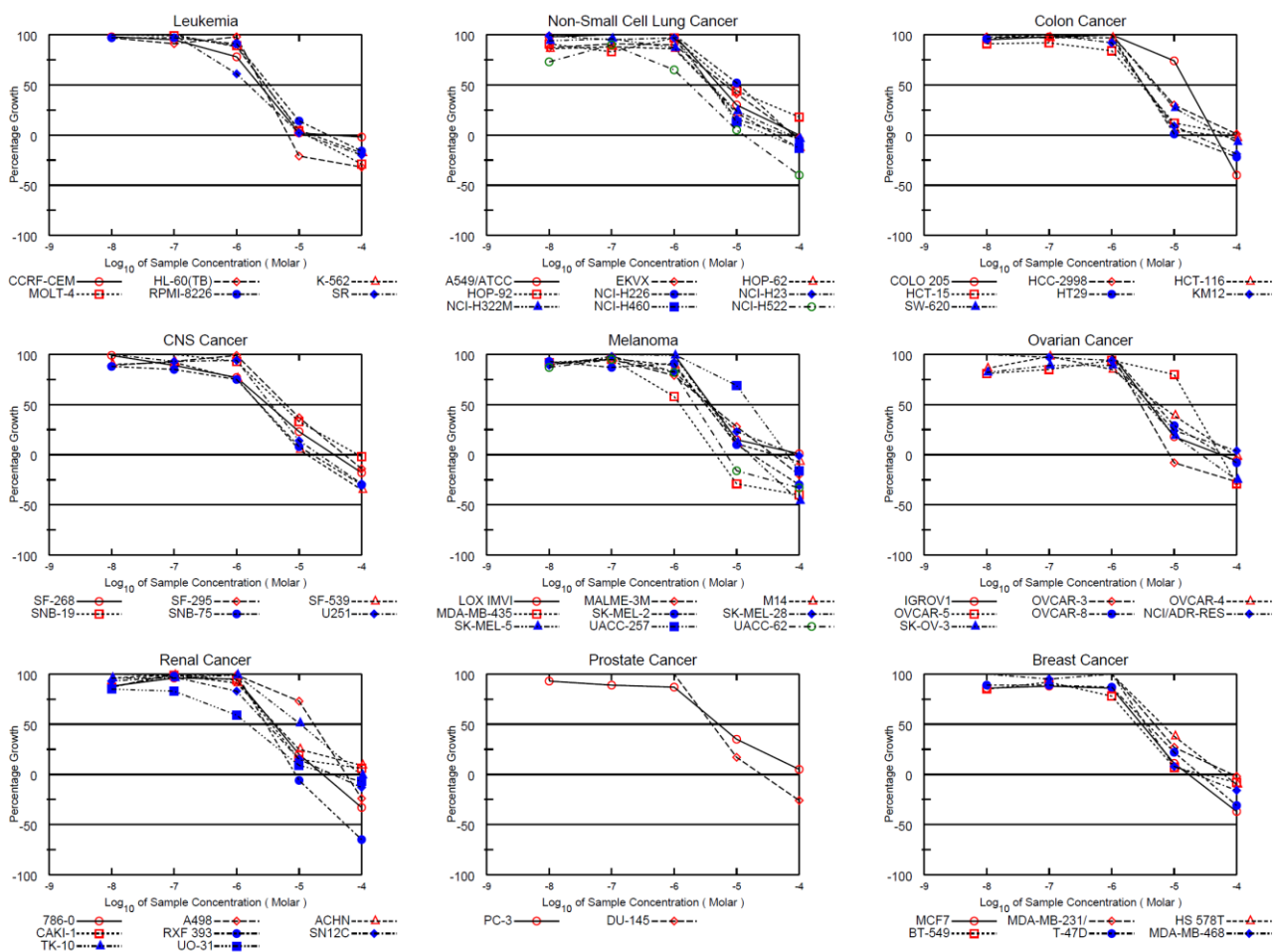


Figure S1. Antiproliferative profile of compound **3b** in terms of GP and Log₁₀ molar concentration in five dose assay.

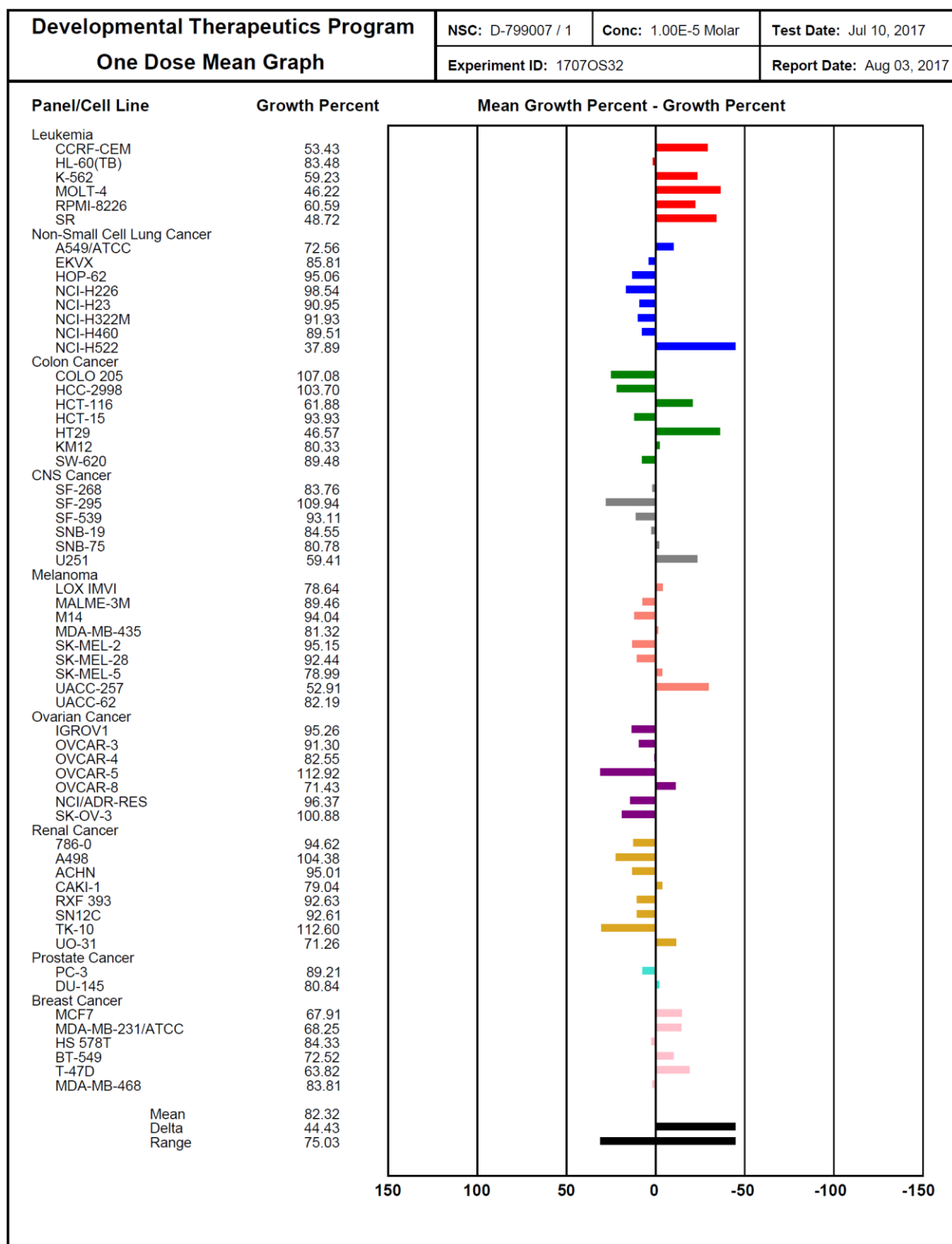


Figure S2. 60 NCI cancer cell lines based antiproliferative activity of curcumin analogue **3a** in single dose assay at 10 μ M.

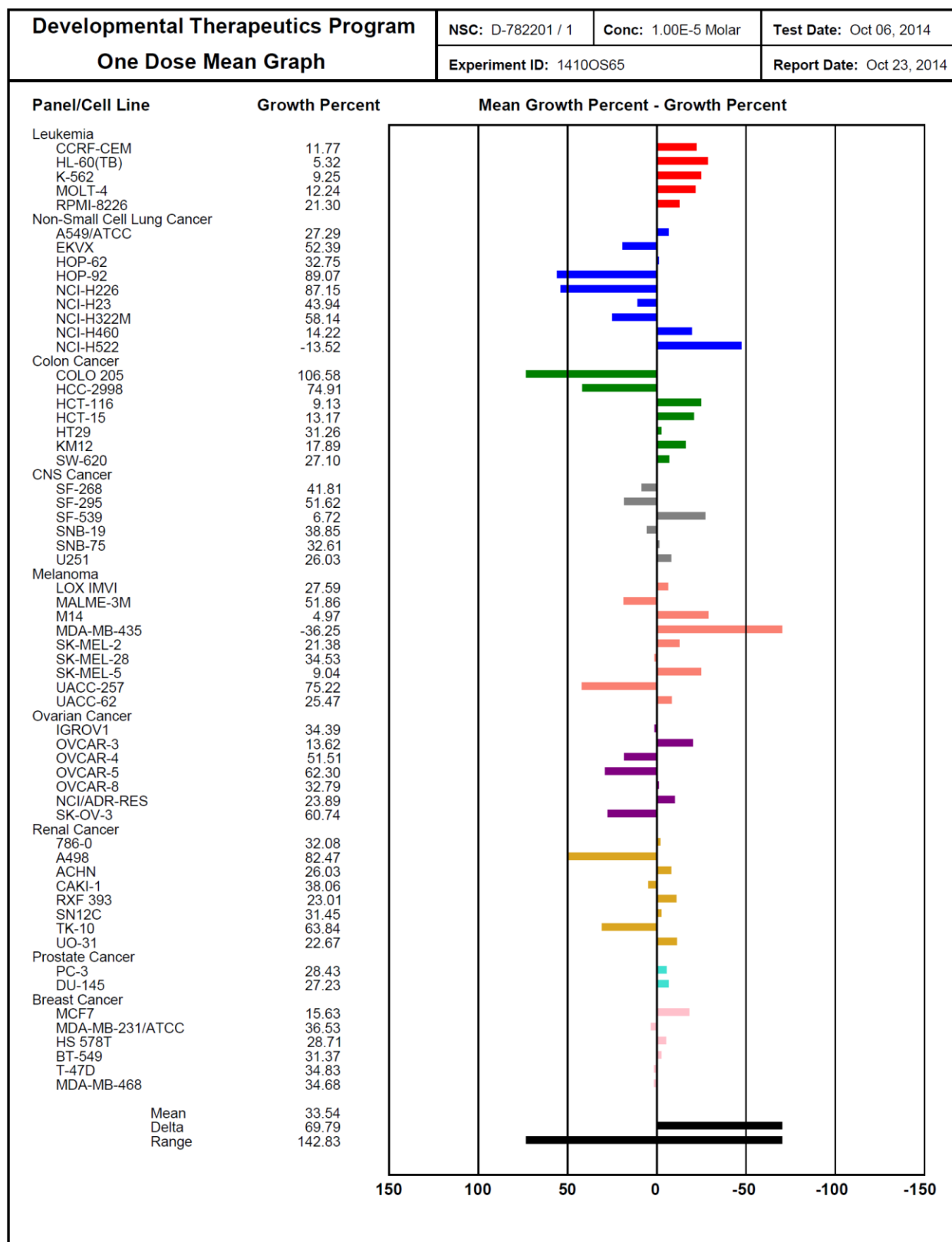


Figure S3. 60 NCI cancer cell lines based antiproliferative activity of curcumin analogue **3b** in single dose assay at 10 μ M.

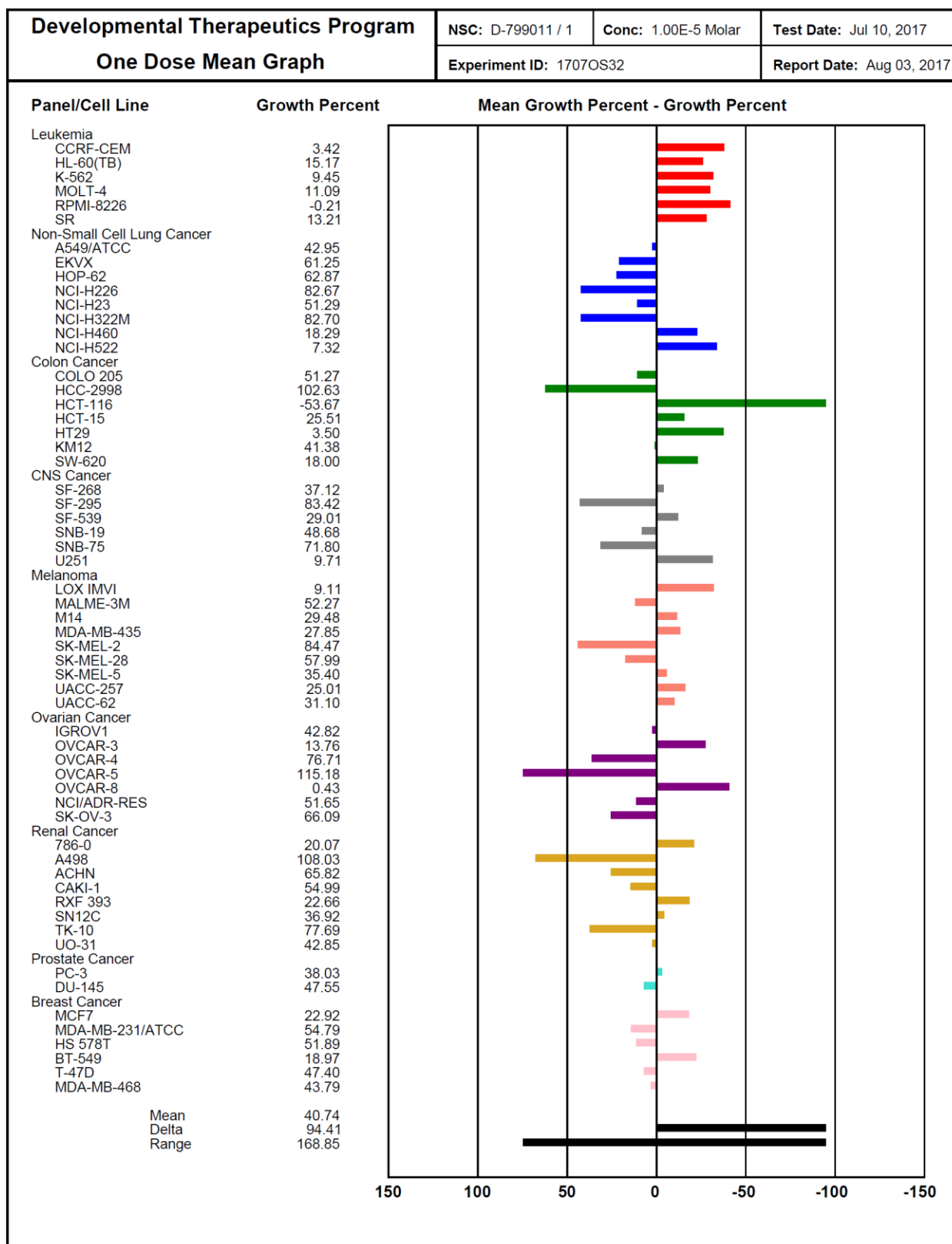


Figure S4. 60 NCI cancer cell lines based antiproliferative activity of curcumin analogue **3c** in single dose assay at 10 μ M.