

Supplemental Material to:

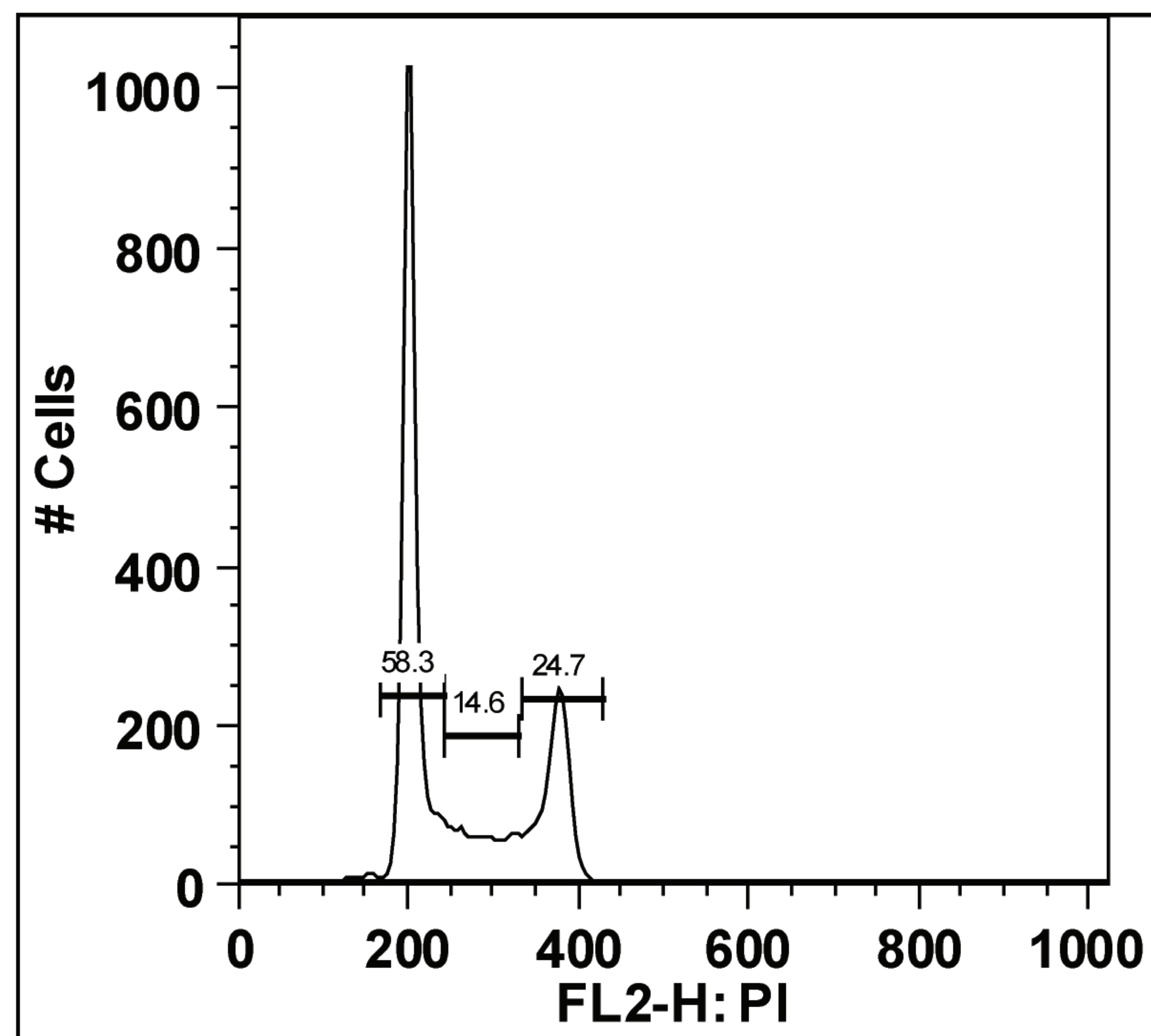
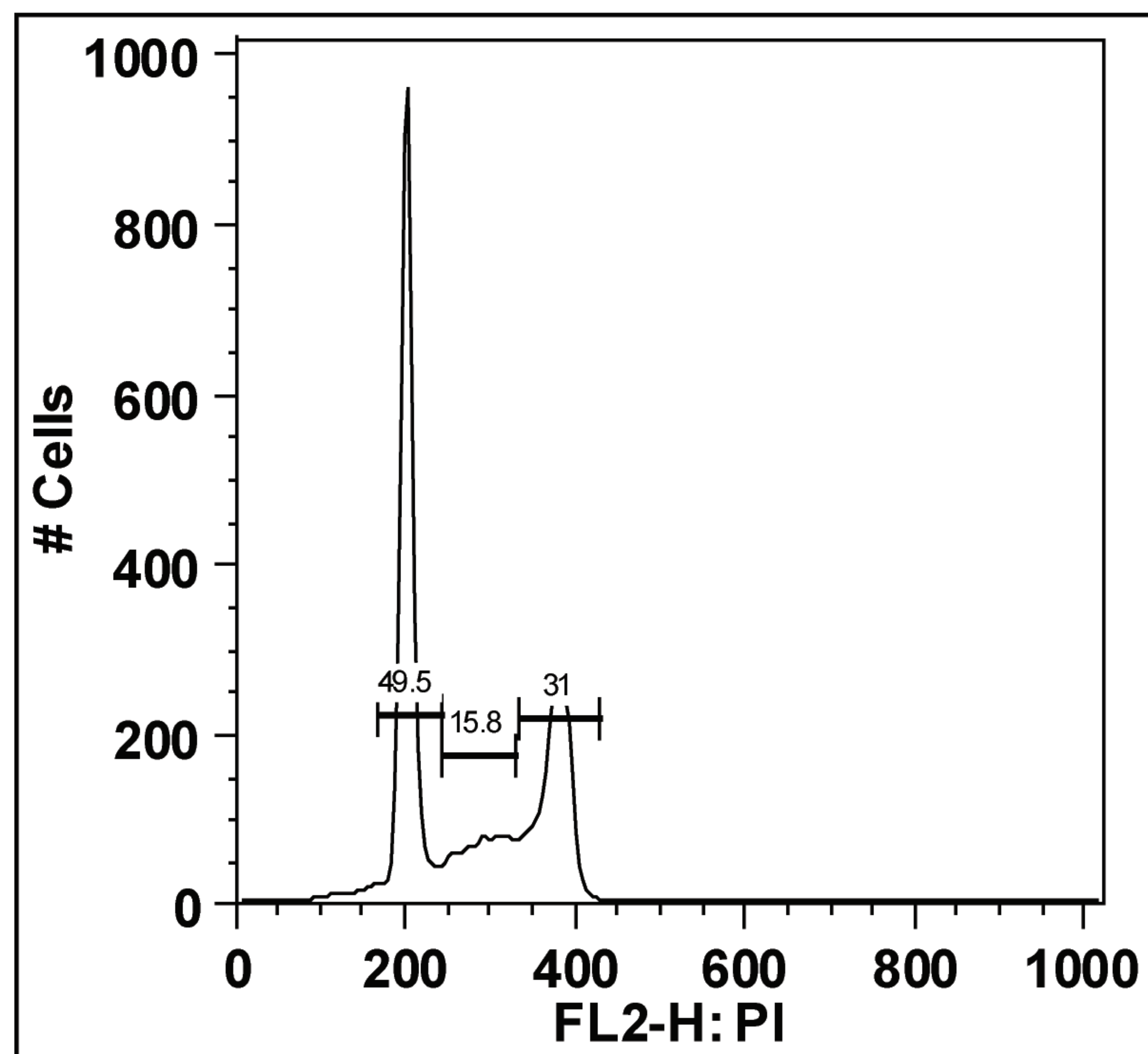
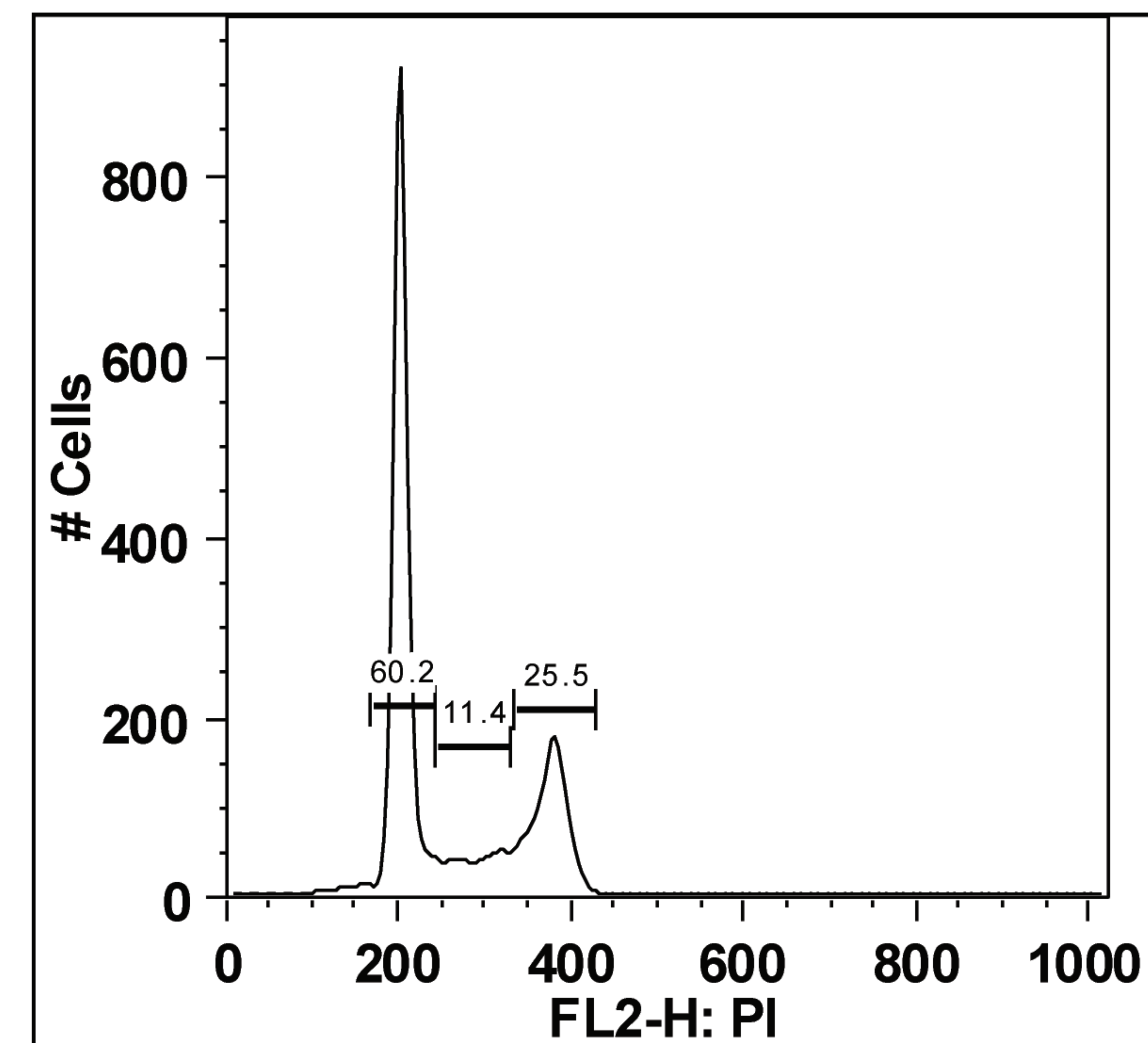
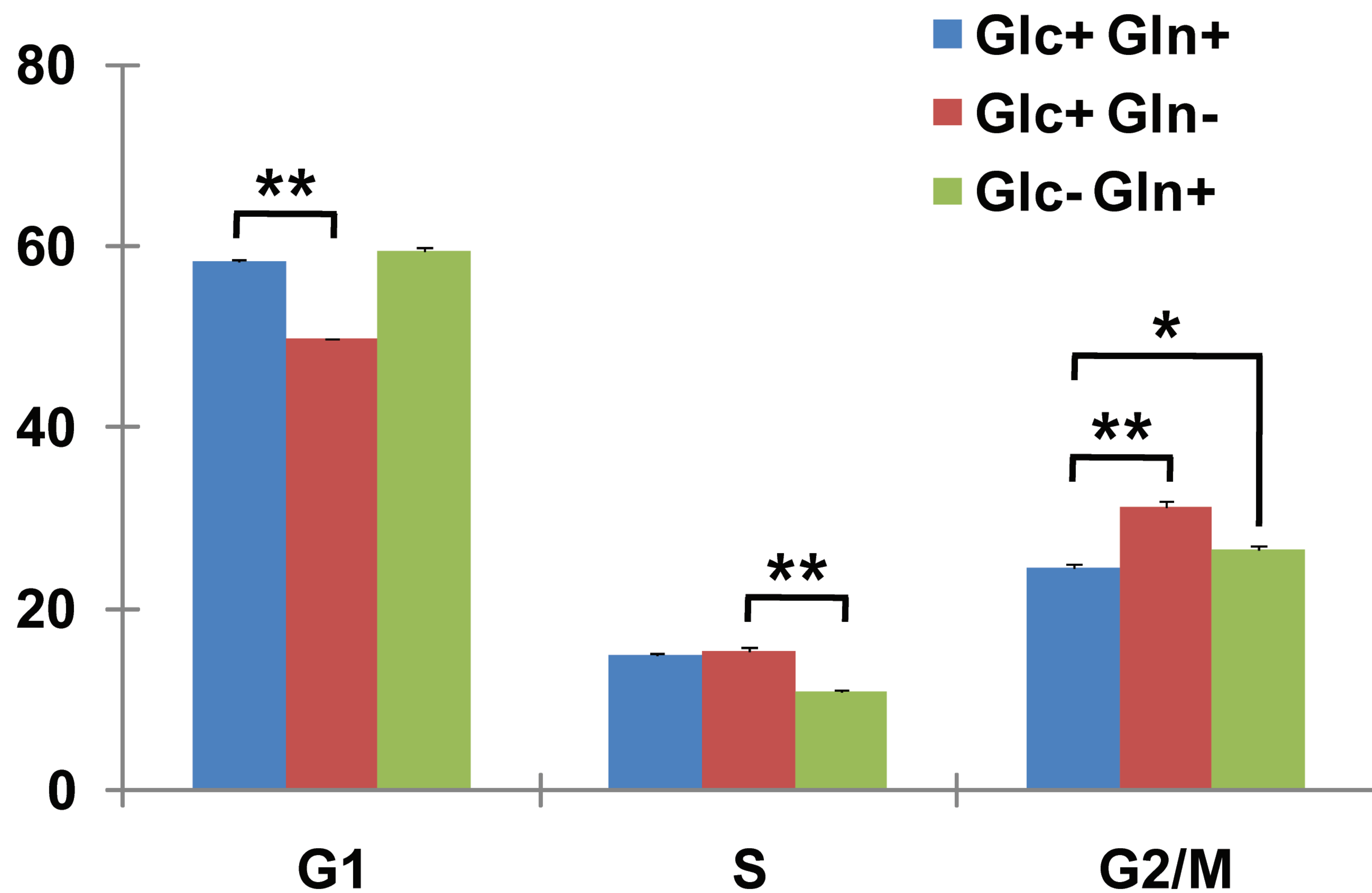
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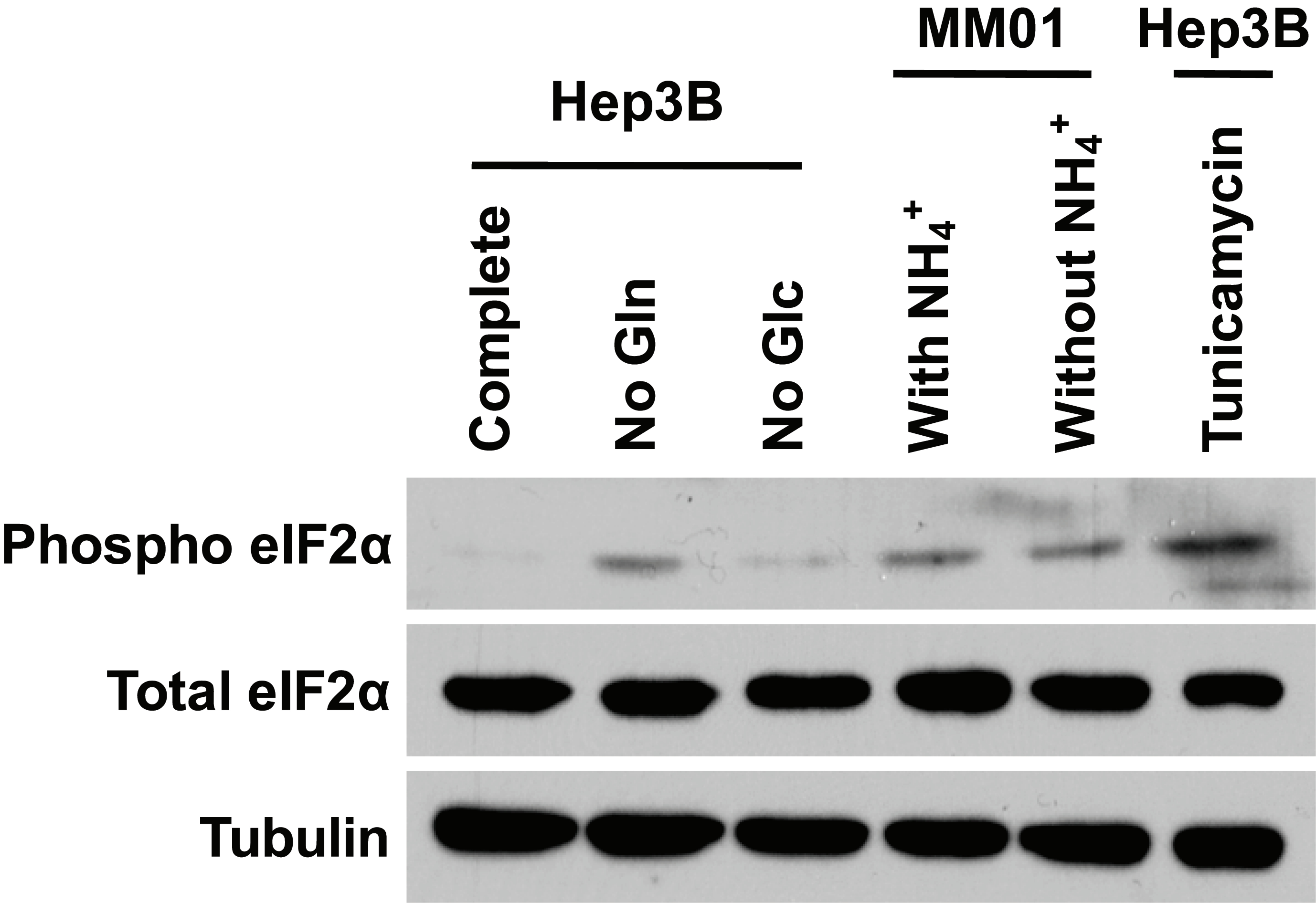
**Glutamine depletion and glucose depletion
trigger growth inhibition via distinctive
gene expression reprogramming**

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A.**Control****Gln-****Glc-****B.**



Supplemental Table 1 (In a separated Excel file.)

The list of detected genes in Hep3B cells treated with either Gln- or Glc-depletion or MM01 cells compared to Hep3B cells in complete medium. (List based on Gln-depleted/Control with Log₂ Ratio >3 & <-3).

Supplemental Table 2 (In a separated Excel file.)

The lists of genes for Figure 2E as following:

	Sheet No.	Group
Gln-depletion vs Control cells	Sheet 1	Cell Cycle Control of Chromosomal Replication
	Sheet 2	Cell Cycle Regulation by BTG Family Proteins
	Sheet 3	Cell Cycle: G1/S Checkpoint Regulation
	Sheet 4	Cyclins and Cell Cycle Regulation
	Sheet5	Mitotic Roles of Polo-Like Kinase
	Sheet 6	Cell Cycle: G2/M DNA Damage Checkpoint Regulation
Glc-depletion vs Control cells	Sheet 7	Cell Cycle Control of Chromosomal Replication
	Sheet 8	Cell Cycle Regulation by BTG Family Proteins
	Sheet 9	Cell Cycle: G1/S Checkpoint Regulation
	Sheet 10	Cyclins and Cell Cycle Regulation
	Sheet 11	Mitotic Roles of Polo-Like Kinase
	Sheet 12	Cell Cycle: G2/M DNA Damage Checkpoint Regulation

Supplemental Table 3 Regulation Directions of TCF3 Target Genes Upon Gln-Depletion

Target Genes	Log₂Ratio	Published Findings	Prediction
<i>WBP5</i>	-3.343	Downregulates (1)	Activated
<i>TYMS</i>	-2.308	Downregulates (1)	Activated
<i>TOP2A</i>	-2.881	Downregulates (1)	Activated
<i>TCF3</i>	1.616	Upregulates (11)	Activated
<i>SLC12A2</i>	-1.115	Downregulates (1)	Activated
<i>PGK1</i>	-2.324	Downregulates (1)	Activated
<i>NKX2-5</i>	1.114	Upregulates (1)	Activated
<i>MKI67</i>	-1.600	Downregulates (1)	Activated
<i>MAD2L1</i>	-3.492	Downregulates (1)	Activated
<i>KLHDC2</i>	-2.862	Downregulates (1)	Activated
<i>FGFR2</i>	-2.384	Downregulates (3)	Activated
<i>EPRS</i>	-5.584	Downregulates (1)	Activated
<i>DAB2IP</i>	2.447	Upregulates (2)	Activated
<i>CDH1</i>	-3.429	Downregulates (4)	Activated
<i>CCND3</i>	1.020	Upregulates (1)	Activated
<i>CCNA2</i>	-2.753	Downregulates (1)	Activated
<i>CA2</i>	-1.991	Downregulates (1)	Activated
<i>BCL2L11</i>	1.057	Upregulates (3)	Activated
<i>ATF3</i>	-1.833	Downregulates (1)	Activated
<i>ANLN</i>	-2.477	Downregulates (1)	Activated
<i>AATF</i>	-4.070	Regulates (1)	
<i>ACACB</i>	1.779	Regulates (8)	
<i>AP3D1</i>	-2.799	Regulates (1)	
<i>ARSA</i>	1.258	Regulates (1)	
<i>BID</i>	-1.330	Regulates (1)	
<i>CASP3</i>	-3.254	Regulates (1)	
<i>CASP6</i>	-5.129	Regulates (1)	
<i>CCNE1</i>	-6.109	Regulates (1)	
<i>CHRNA5</i>	-1.648	Regulates (1)	
<i>CPT1B</i>	1.717	Regulates (1)	
<i>CYP11A1</i>	2.416	Regulates (1)	
<i>DOCK1</i>	-2.450	Regulates (1)	
<i>E2F4</i>	-4.240	Regulates (1)	
<i>ETS2</i>	1.267	Regulates (1)	
<i>GADD45A</i>	-3.341	Regulates (1)	
<i>GATA2</i>	-1.815	Regulates (1)	
<i>GATA3</i>	1.218	Regulates (2)	
<i>GPAM</i>	1.204	Regulates (1)	
<i>ID2</i>	-3.763	Regulates (1)	

<i>IFNAR1</i>	1.050	Regulates (1)
<i>JUND</i>	1.293	Regulates (1)
<i>LRBA</i>	-3.714	Regulates (1)
<i>MLLT4</i>	1.394	Regulates (1)
<i>MSMO1</i>	-1.107	Regulates (1)
<i>MYC</i>	1.471	Regulates (1)
<i>NFIL3</i>	1.909	Regulates (2)
<i>PAFAH1B3</i>	-2.704	Regulates (1)
<i>PLCG2</i>	2.595	Regulates (1)
<i>PTPRU</i>	2.551	Regulates (1)
<i>RORA</i>	1.148	Regulates (1)
<i>TF</i>	-5.361	Regulates (1)
<i>TMEM180</i>	2.032	Regulates (1)
<i>XBP1</i>	-6.097	Regulates (1)

* TCF3 function predicted based on directions of target gene expression.

Supplemental Table 4 Regulation Directions of XBP1 Target Genes Upon Glc-Depletion

Genes in dataset	Log ₂ Ratio	Findings	Prediction*
<i>SRP68</i>	1.159	Upregulates (1)	Activated
<i>SERP1</i>	1.667	Upregulates (2)	Activated
<i>SEC24D</i>	1.230	Upregulates (1)	Activated
<i>SEC22B</i>	1.050	Upregulates (1)	Activated
<i>PIGA</i>	1.179	Upregulates (1)	Activated
<i>PDIA6</i>	1.317	Upregulates (2)	Activated
<i>MCFD2</i>	1.227	Upregulates (1)	Activated
<i>HYOU1</i>	1.543	Upregulates (1)	Activated
<i>HSPA13</i>	2.207	Upregulates (1)	Activated
<i>HMOX1</i>	2.244	Upregulates (1)	Activated
<i>HM13</i>	1.191	Upregulates (1)	Activated
<i>HERPUD1</i>	2.349	Upregulates (1)	Activated
<i>GOLPH3L</i>	1.055	Upregulates (1)	Activated
<i>GOLGA4</i>	1.064	Upregulates (1)	Activated
<i>EDEM1</i>	1.292	Upregulates (7)	Activated
<i>DNAJC1</i>	1.357	Upregulates (1)	Activated
<i>DNAJB9</i>	3.093	Upregulates (6)	Activated
<i>DERL1</i>	1.290	Upregulates (1)	Activated
<i>DDIT3</i>	2.642	Upregulates (1)	Activated
<i>COG6</i>	1.033	Upregulates (1)	Activated
<i>BFAR</i>	1.241	Upregulates (1)	Activated
<i>BET1</i>	1.171	Upregulates (1)	Activated
<i>ATF6</i>	1.423	Upregulates (1)	Activated
<i>ARFGAP3</i>	1.811	Upregulates (1)	Activated
<i>ALG2</i>	1.010	Upregulates (1)	Activated
<i>TTR</i>	-1.702	Upregulates (1)	Inhibited
<i>SERPINA1</i>	-2.051	Upregulates (1)	Inhibited
<i>RCN3</i>	-1.208	Upregulates (1)	Inhibited
<i>FKBP1B</i>	-1.063	Upregulates (1)	Inhibited
<i>FKBP11</i>	-1.271	Upregulates (1)	Inhibited
<i>CAT</i>	-1.089	Upregulates (16)	Inhibited
<i>APOA1</i>	-1.039	Upregulates (1)	Inhibited
<i>DNAJC3</i>	1.068	Regulates (6)	
<i>MYC</i>	1.752	Regulates (2)	
<i>TOP1</i>	1.580	Regulates (1)	

* XBP1 function predicted based on directions of target gene expression.

Supplemental Table 5 Regulation Directions of PPAR α Target Genes in MM01

Target Genes	Log(Ratio)	Findings	Prediction*
<i>SORD</i>	-1.221	Downregulates (1)	Activated
<i>SOCS2</i>	-1.220	Downregulates (2)	Activated
<i>SELENBP1</i>	-1.424	Downregulates (1)	Activated
<i>PAH</i>	-1.766	Downregulates (1)	Activated
<i>NPC1L1</i>	-1.295	Downregulates (2)	Activated
<i>MBL2</i>	-1.427	Downregulates (2)	Activated
<i>KHK</i>	-1.794	Downregulates (1)	Activated
<i>INSIG1</i>	1.118	Upregulates (2)	Activated
<i>HPD</i>	-1.749	Downregulates (1)	Activated
<i>HNF4A</i>	-1.284	Downregulates (2)	Activated
<i>GOS2</i>	1.614	Upregulates (1)	Activated
<i>FTCD</i>	-2.096	Downregulates (1)	Activated
<i>FGG</i>	-1.214	Downregulates (2)	Activated
<i>FGB</i>	-3.597	Downregulates (6)	Activated
<i>FGA</i>	-1.488	Downregulates (3)	Activated
<i>EDN1</i>	-3.070	Downregulates (2)	Activated
<i>CEBPD</i>	-1.241	Downregulates (1)	Activated
<i>CDKN2A</i>	1.221	Upregulates (8)	Activated
<i>C6</i>	-1.971	Downregulates (1)	Activated
<i>C1S</i>	-2.261	Downregulates (1)	Activated
<i>C1R</i>	-1.641	Downregulates (1)	Activated
<i>ARG1</i>	-4.019	Downregulates (1)	Activated
<i>APOC3</i>	-2.498	Downregulates (13)	Activated
<i>APOC2</i>	-1.155	Downregulates (2)	Activated
<i>ACTA1</i>	-3.146	Regulates (2)	
<i>APOM</i>	-1.507	Regulates (5)	
<i>CFI</i>	-1.277	Regulates (1)	
<i>ECI2</i>	-1.072	Regulates (1)	
<i>FABP5</i>	-1.361	Regulates (3)	
<i>GLUD1</i>	-2.143	Regulates (1)	
<i>GPT</i>	-1.644	Regulates (1)	
<i>HPX</i>	-3.111	Regulates (1)	
<i>IFITM3</i>	-1.042	Regulates (1)	
<i>IGFBP1</i>	-1.422	Regulates (7)	
<i>IGFBP3</i>	1.583	Regulates (1)	
<i>SULT2A1</i>	-2.190	Regulates (3)	
<i>UGT2B4</i>	-2.320	Regulates (1)	

* PPAR α function predicted based on directions of target gene expression.