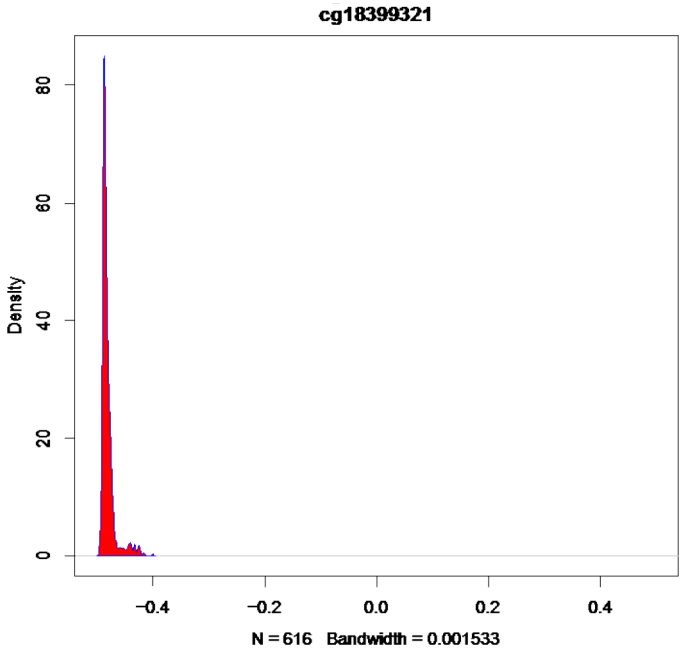
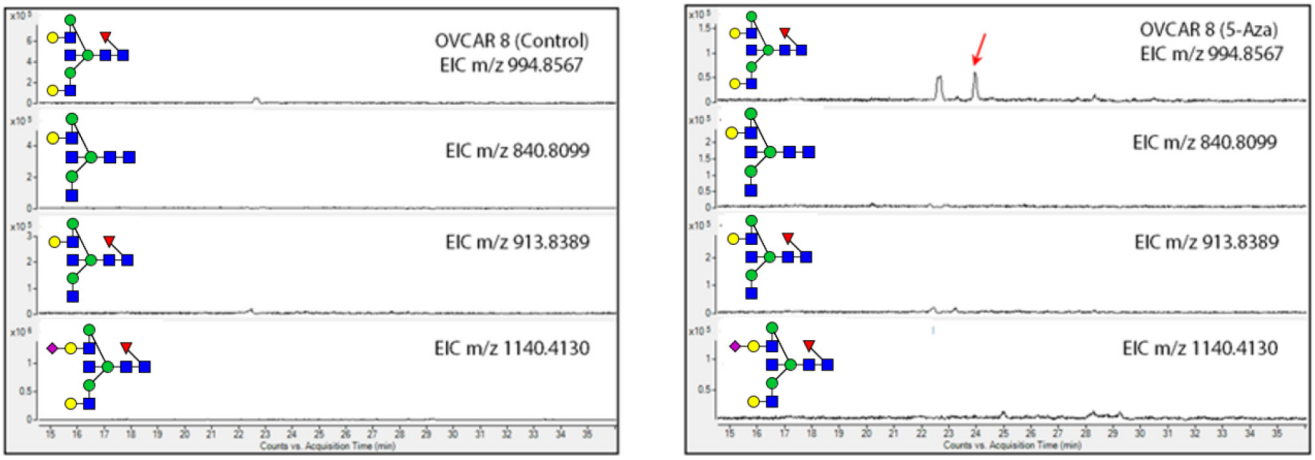
Epigenetic activation of *MGAT3* and corresponding bisecting GlcNAc shortens the survival of cancer patients

Supplementary Materials



Supplementary Figure S1: Histogram displaying degree of methylation of TCGA serous ovarian cystadenocarcinoma at probe cg18399321 of the 27K Illumina human Methylation Array.



Supplementary Figure S2: Extracted Ion Chromatogram (EIC) of untreated OVCAR8 cells (left) and 5-Aza treated OVCAR8 cells (right).

Supplementary Table S1: Precise genomic location on chromosome 22q13 hg38 of *MGAT*3 CpG Islands are listed

	CpG Island #	Start	End	Length	CpGs
Genome Browser	1	39456201	39457987	1787	195(224)
	2	39487511	39489005	1495	141
CPG PLOT	1	39456673	39458072	1400	204
	2	39487545	39487887	344	35
	3	39487911	39488415	505	55
	4	39488564	39488808	245	21
Methprimer	1	39456165	39456318	154	11
	2	39456527	39456646	119	8
	3	39456673	39458072	1400	204
	4	39487545	39487887	344	35
	5	39487911	39488415	505	55
	6	39488438	39488543	107	7
	7	39488564	39488808	245	21
	8	39488816	39488984	169	14
CpG Island Searcher	1	39456418	39458412	1995	273
	2	39487384	39489238	1855	198

Default settings for CpG island query were GC content > = 50%, length > = 200 bp and ration of observed to expected CGs > = 0.6 in the case of Genome Browser, Cpgplot and Methprimer. CpG island searcher used GC content > = 55% and ratio observed to expected GCs > = 0.65.

Supplementary Table S2: Correlating *MGAT3* expression and DNA methylation at two probes in close proximity to the transcription start site of *MGAT3*

MGAT3 expression PAM50_mRNA_nature2012 (*n* = 514); **Figure 6A**
ANOVA *p*-value < 0.0001

Basal-like (*n* = 98)	**HER2-enriched (*n* = 58)**	**Luminal A (*n* = 231)**	**Luminal B (*n* = 127)**
Pairwise comparison	**Basal-like**	**HER2-enriched**	**Luminal A**
HER2-enriched	< 0.0001		
Luminal A	< 0.0001	0.051	
Luminal B	< 0.0001	1.0	< 0.0001

DNA methylation (*n* = 208); Figure 6C and 6D

Basal-like (*n* = 40)	**HER2-enriched (*n* = 14)**	**Luminal A (*n* = 108)**	**Luminal B (*n* = 46)**
probe cg18399321 (ANOVA *p*-value 0.0189)			
Pairwise comparison	**Basal-like**	**HER2-enriched**	**Luminal A**
HER2-enriched	1		
Luminal A	1	1	
Luminal B	0.013	0.880	0.119
probe cg03377355 (ANOVA *p*-value < 0.0001)			
Pairwise comparison	**Basal-like**	**HER2-enriched**	**Luminal A**
HER2-enriched	0.0593		
Luminal A	0.0593	0.9113	
Luminal B	9.5E-06	0.1973	0.0201