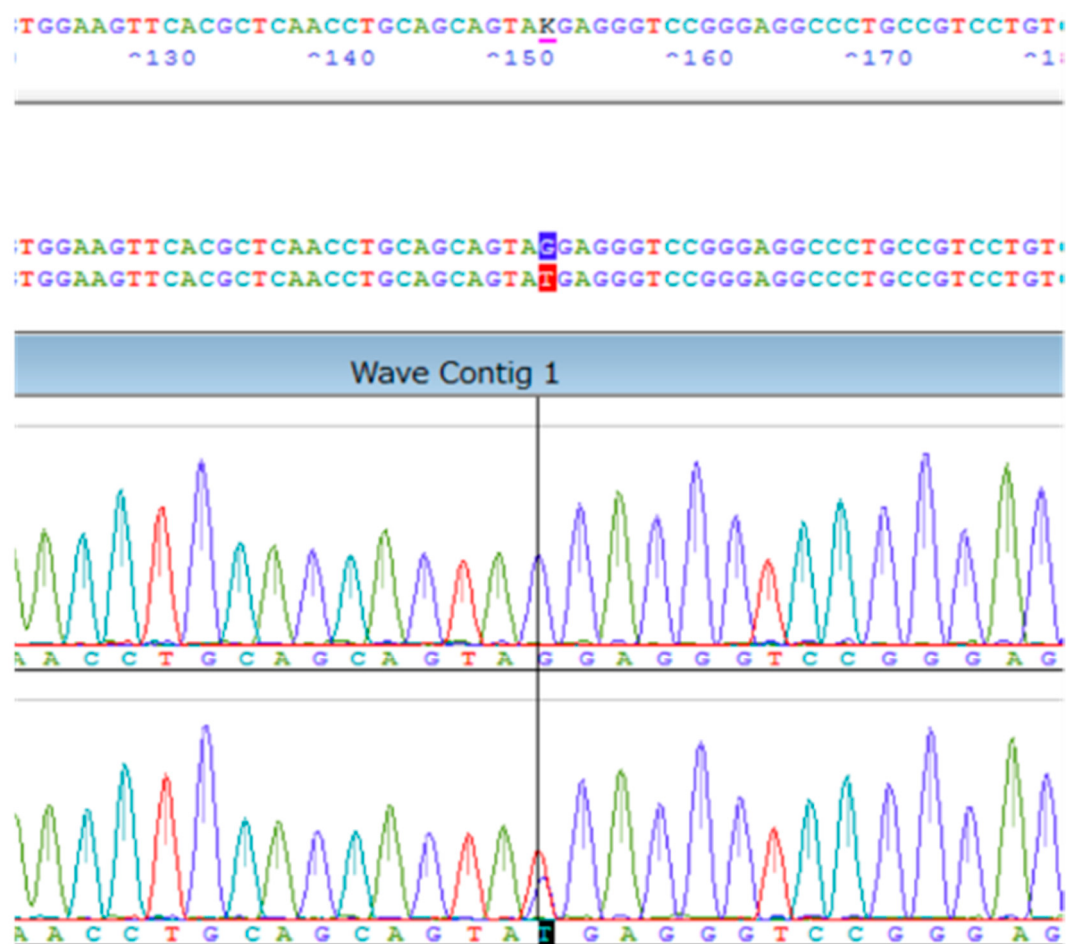
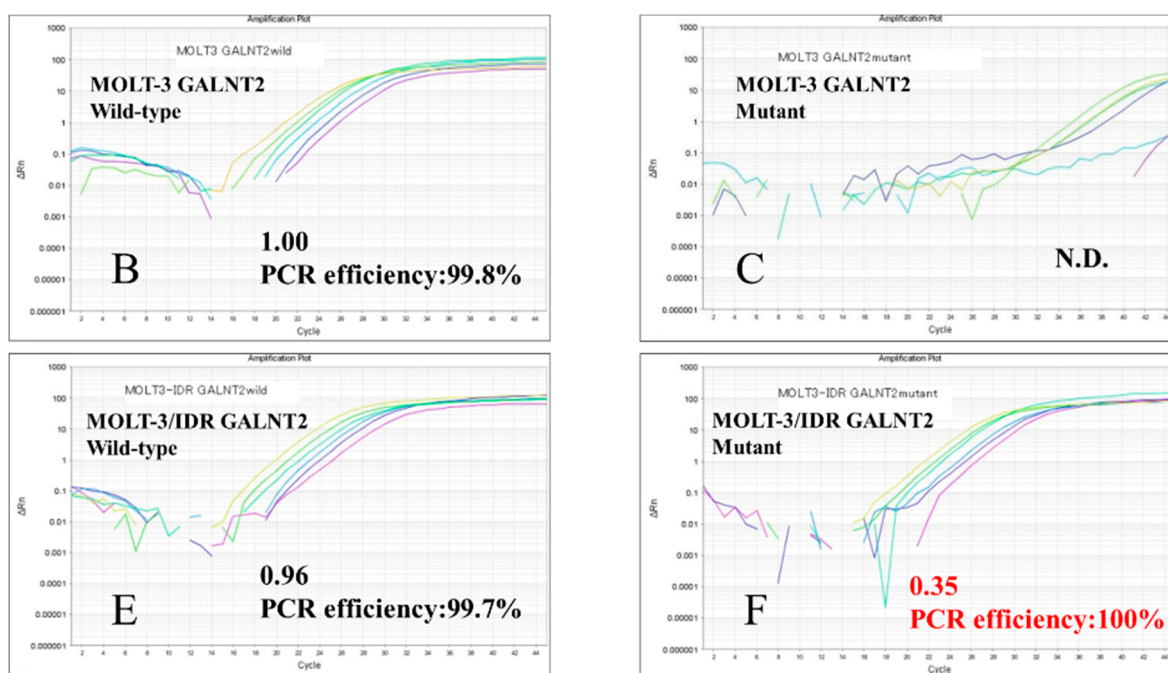


# Supplementary Materials: Analysis to Estimate Genetic Variations in the Idarubicin-Resistant Derivative MOLT-3

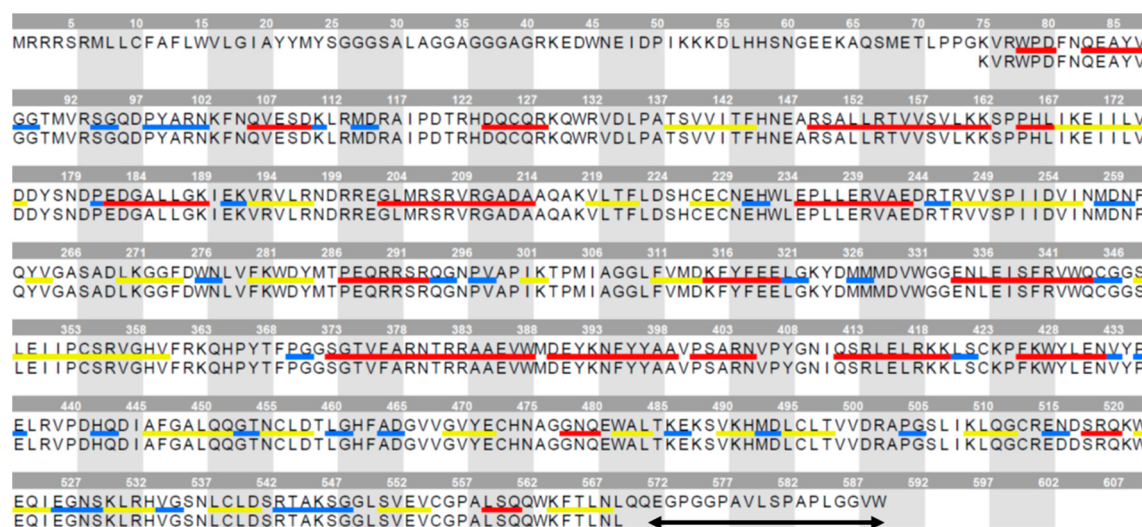
Tomoyoshi Komiyama, Atsushi Ogura, Takatsugu Hirokawa, Miao Zhijing, Hiroshi Kamiguchi, Satomi Asai, Hayato Miyachi and Hiroyuki Kobayashi



**Figure S1.** Sequencing profile of the stop codon mutation in the *GALNT2* gene of MOLT-3/IDR cells. Green A: Adenine, Red T: Thymine, Blue G: Guanine, Light blue C: Cytosine.



**Figure S2.** Gene expression quantification analysis of the *GALNT2* gene. (B) *GALNT2* wild-type in MOLT-3 cells; (C) *GALNT2* mutant in MOLT-3 cells; (E) *GALNT2* wild-type of MOLT-3/IDR cells; (F) *GALNT2* mutant in MOLT-3/IDR cells (Figure 1). N.D.: Not Detected.



**Figure S3.** Alignment of the wild-type (lower) and mutant (upper) *GALNT2* protein sequences. Structure annotation of the helix, sheet, and turn structures derived from the X-ray structure of wild-type *GALNT2* are indicated by bold bars in red, yellow, and blue, respectively. The black arrow showed an additional 18 amino acids in the translated *GALNT2* protein. The extended sequence region indicated by the arrow at the C-terminus is the region used as the free modeling template. The sequence alignment was created with MOE software (Chemical Computing Group).

**Table S1.** Four candidate genes without *GALNT2* gene from CGH array analysis.

| Chrom | Left      | Right     | ref_seq | var_type | zygosity | var_seq1 | var_seq2 | Gene Name    | Transcript Name | dbsnp       |
|-------|-----------|-----------|---------|----------|----------|----------|----------|--------------|-----------------|-------------|
| chr4  | 153247498 | 153247505 | tttttt  | DEL      | Hom      | t        | t        | <i>FBXW7</i> | NM_001013415    |             |
| chr4  | 153247498 | 153247505 | tttttt  | DEL      | Hom      | t        | t        | <i>FBXW7</i> | NM_018315       |             |
| chr4  | 153247498 | 153247505 | tttttt  | DEL      | Hom      | t        | t        | <i>FBXW7</i> | NM_033632       |             |
| chr4  | 153249146 | 153249147 | t       | SNP      | Hom      | c        | c        | <i>FBXW7</i> | NM_001013415    | rs4419460   |
| chr4  | 153249146 | 153249147 | t       | SNP      | Hom      | c        | c        | <i>FBXW7</i> | NM_018315       | rs4419460   |
| chr4  | 153249146 | 153249147 | t       | SNP      | Hom      | c        | c        | <i>FBXW7</i> | NM_033632       | rs4419460   |
| chr4  | 153258886 | 153258887 | a       | SNP      | Het      | g        | a        | <i>FBXW7</i> | NM_001013415    |             |
| chr4  | 153258886 | 153258887 | a       | SNP      | Het      | g        | a        | <i>FBXW7</i> | NM_018315       |             |
| chr4  | 153258886 | 153258887 | a       | SNP      | Het      | g        | a        | <i>FBXW7</i> | NM_033632       |             |
| chr4  | 153267968 | 153267969 | a       | SNP      | Hom      | g        | g        | <i>FBXW7</i> | NM_001013415    | rs2714803   |
| chr4  | 153267968 | 153267969 | a       | SNP      | Hom      | g        | g        | <i>FBXW7</i> | NM_018315       | rs2714803   |
| chr4  | 153267968 | 153267969 | a       | SNP      | Hom      | g        | g        | <i>FBXW7</i> | NM_033632       | rs2714803   |
| chr4  | 153268238 | 153268242 | aaaa    | DEL      | Het      | a        | aaaa     | <i>FBXW7</i> | NM_001013415    |             |
| chr4  | 153268238 | 153268242 | aaaa    | DEL      | Het      | a        | aaaa     | <i>FBXW7</i> | NM_018315       |             |
| chr4  | 153268238 | 153268242 | aaaa    | DEL      | Het      | a        | aaaa     | <i>FBXW7</i> | NM_033632       |             |
| chr4  | 153329073 | 153329074 | t       | SNP      | Het      | c        | t        | <i>FBXW7</i> | NM_033632       |             |
| chr4  | 155156207 | 155156208 | g       | SNP      | Hom      | a        | a        | <i>DCHS2</i> | NM_017639       | rs7655799   |
| chr4  | 155157041 | 155157042 | g       | SNP      | Het      | t        | g        | <i>DCHS2</i> | NM_017639       |             |
| chr4  | 155161666 | 155161667 | c       | SNP      | Hom      | t        | t        | <i>DCHS2</i> | NM_017639       | rs6535989   |
| chr4  | 155180652 | 155180653 | c       | SNP      | Het      | a        | c        | <i>DCHS2</i> | NM_017639       | rs111516993 |
| chr4  | 155191710 | 155191712 | gt      | MNP      | Het      | aa       | gt       | <i>DCHS2</i> | NM_017639       |             |
| chr4  | 155219318 | 155219319 | c       | SNP      | Het      | t        | c        | <i>DCHS2</i> | NM_017639       | rs28561984  |
| chr4  | 155219361 | 155219362 | a       | SNP      | Het      | g        | a        | <i>DCHS2</i> | NM_017639       | rs17031387  |
| chr4  | 155219662 | 155219663 | g       | SNP      | Het      | c        | g        | <i>DCHS2</i> | NM_017639       | rs17031394  |
| chr4  | 155225879 | 155225880 | c       | SNP      | Het      | t        | c        | <i>DCHS2</i> | NM_017639       |             |
| chr4  | 155226421 | 155226422 | c       | SNP      | Het      | a        | c        | <i>DCHS2</i> | NM_017639       | rs12507663  |
| chr4  | 155236778 | 155236779 | c       | SNP      | Hom      | g        | g        | <i>DCHS2</i> | NM_017639       | rs1388085   |

Table S1. Cont.

| Chrom | Left      | Right     | ref_seq | var_type | zygosity | var_seq1 | var_seq2 | Gene Name | Transcript Name | dbSNP      |
|-------|-----------|-----------|---------|----------|----------|----------|----------|-----------|-----------------|------------|
| chr4  | 155241438 | 155241439 | g       | SNP      | Het      | a        | g        | DCHS2     | NM_017639       | rs11935503 |
| chr4  | 155241572 | 155241573 | g       | SNP      | Het      | a        | g        | DCHS2     | NM_017639       | rs11935573 |
| chr4  | 155243573 | 155243574 | c       | SNP      | Hom      | t        | t        | DCHS2     | NM_017639       | rs13109747 |
| chr4  | 155243604 | 155243605 | t       | SNP      | Hom      | c        | c        | DCHS2     | NM_017639       | rs1352714  |
| chr4  | 155244475 | 155244476 | g       | SNP      | Hom      | t        | t        | DCHS2     | NM_001142552    | rs12500437 |
| chr4  | 155244475 | 155244476 | g       | SNP      | Hom      | t        | t        | DCHS2     | NM_017639       | rs12500437 |
| chr4  | 155244499 | 155244502 | aaa     | DEL      | Het      |          | aaa      | DCHS2     | NM_001142552    |            |
| chr4  | 155244499 | 155244502 | aaa     | DEL      | Het      |          | aaa      | DCHS2     | NM_017639       |            |
| chr4  | 155249431 | 155249432 | t       | SNP      | Het      | c        | t        | DCHS2     | NM_001142552    | rs1472070  |
| chr4  | 155249431 | 155249432 | t       | SNP      | Het      | c        | t        | DCHS2     | NM_017639       | rs1472070  |
| chr4  | 155256177 | 155256178 | a       | SNP      | Het      | g        | a        | DCHS2     | NM_001142552    | rs6858157  |
| chr4  | 155256177 | 155256178 | a       | SNP      | Het      | g        | a        | DCHS2     | NM_017639       | rs6858157  |
| chr4  | 155256205 | 155256206 | g       | SNP      | Hom      | a        | a        | DCHS2     | NM_001142552    | rs6858712  |
| chr4  | 155256205 | 155256206 | g       | SNP      | Hom      | a        | a        | DCHS2     | NM_017639       | rs6858712  |
| chr4  | 155264637 | 155264638 | g       | SNP      | Het      | a        | g        | DCHS2     | NM_001142552    | rs62331892 |
| chr4  | 155264637 | 155264638 | g       | SNP      | Het      | a        | g        | DCHS2     | NM_017639       | rs62331892 |
| chr4  | 155295168 | 155295171 | aaa     | DEL      | Het      |          | aaa      | DCHS2     | NM_001142552    |            |
| chr4  | 155295168 | 155295171 | aaa     | DEL      | Het      |          | aaa      | DCHS2     | NM_017639       |            |
| chr4  | 155295171 | 155295178 | aaaaaaa | DEL      | Hom      |          |          | DCHS2     | NM_001142552    |            |
| chr4  | 155295171 | 155295178 | aaaaaaa | DEL      | Hom      |          |          | DCHS2     | NM_017639       |            |
| chr4  | 155305491 | 155305492 | c       | SNP      | Het      | t        | c        | DCHS2     | NM_001142552    | rs34927139 |
| chr4  | 155305491 | 155305492 | c       | SNP      | Het      | t        | c        | DCHS2     | NM_017639       | rs34927139 |
| chr4  | 155312411 | 155312412 | g       | SNP      | Het      | a        | g        | DCHS2     | NM_001142552    | rs62331900 |
| chr4  | 155312411 | 155312412 | g       | SNP      | Het      | a        | g        | DCHS2     | NM_017639       | rs62331900 |
| chr4  | 155407407 | 155407408 | a       | SNP      | Hom      | t        | t        | DCHS2     | NM_001142552    | rs4346631  |
| chr4  | 155407569 | 155407570 | t       | SNP      | Hom      | c        | c        | DCHS2     | NM_001142552    | rs12501998 |

Table S1. Cont.

| Chrom | Left      | Right     | ref_seq | var_type | zygosity | var_seq1 | var_seq2 | Gene Name     | Transcript Name | dbsnp      |
|-------|-----------|-----------|---------|----------|----------|----------|----------|---------------|-----------------|------------|
| chr4  | 155407595 | 155407596 | c       | SNP      | Het      | a        | c        | <i>DCHS2</i>  | NM_001142552    |            |
| chr4  | 155407595 | 155407596 | c       | SNP      | Het      | a        | c        | <i>DCHS2</i>  | NM_001142553    |            |
| chr4  | 155407680 | 155407681 | a       | SNP      | Hom      | g        | g        | <i>DCHS2</i>  | NM_001142552    | rs13151559 |
| chr4  | 155407680 | 155407681 | a       | SNP      | Hom      | g        | g        | <i>DCHS2</i>  | NM_001142553    | rs13151559 |
| chr4  | 155410284 | 155410285 | a       | DEL      | Hom      |          |          | <i>DCHS2</i>  | NM_001142552    | rs34485270 |
| chr4  | 155410284 | 155410285 | a       | DEL      | Hom      |          |          | <i>DCHS2</i>  | NM_001142553    | rs34485270 |
| chr4  | 155410407 | 155410408 | c       | SNP      | Het      | g        | c        | <i>DCHS2</i>  | NM_001142552    | rs9999285  |
| chr4  | 155410407 | 155410408 | c       | SNP      | Het      | g        | c        | <i>DCHS2</i>  | NM_001142553    | rs9999285  |
| chr4  | 155410822 | 155410823 | g       | SNP      | Hom      | a        | a        | <i>DCHS2</i>  | NM_001142552    | rs4696593  |
| chr4  | 155410822 | 155410823 | g       | SNP      | Hom      | a        | a        | <i>DCHS2</i>  | NM_001142553    | rs4696593  |
| chr4  | 155411065 | 155411066 | t       | SNP      | Hom      | c        | c        | <i>DCHS2</i>  | NM_001142552    | rs7656522  |
| chr4  | 155411065 | 155411066 | t       | SNP      | Hom      | c        | c        | <i>DCHS2</i>  | NM_001142553    | rs7656522  |
| chr4  | 155411104 | 155411105 | a       | SNP      | Hom      | c        | c        | <i>DCHS2</i>  | NM_001142552    | rs6536016  |
| chr4  | 155411104 | 155411105 | a       | SNP      | Hom      | c        | c        | <i>DCHS2</i>  | NM_001142553    | rs6536016  |
| chr9  | 140328878 | 140328879 | t       | SNP      | Het      | g        | t        | <i>ENTPD8</i> | NM_001033113    |            |
| chr9  | 140328878 | 140328879 | t       | SNP      | Het      | g        | t        | <i>ENTPD8</i> | NM_198585       |            |
| chr9  | 140329618 | 140329619 | a       | SNP      | Het      | g        | a        | <i>ENTPD8</i> | NM_001033113    | rs28589413 |
| chr9  | 140329618 | 140329619 | a       | SNP      | Het      | g        | a        | <i>ENTPD8</i> | NM_198585       | rs28589413 |
| chr9  | 140330976 | 140330977 | t       | SNP      | Het      | c        | t        | <i>ENTPD8</i> | NM_001033113    | rs13297080 |
| chr9  | 140330976 | 140330977 | t       | SNP      | Het      | c        | t        | <i>ENTPD8</i> | NM_198585       | rs13297080 |
| chr9  | 140331128 | 140331129 | t       | SNP      | Het      | c        | t        | <i>ENTPD8</i> | NM_001033113    |            |
| chr9  | 140331128 | 140331129 | t       | SNP      | Het      | c        | t        | <i>ENTPD8</i> | NM_198585       |            |
| chr9  | 140331833 | 140331834 | a       | SNP      | Hom      | g        | g        | <i>ENTPD8</i> | NM_001033113    | rs9414731  |
| chr9  | 140331833 | 140331834 | a       | SNP      | Hom      | g        | g        | <i>ENTPD8</i> | NM_198585       | rs9414731  |
| chr9  | 140332478 | 140332479 | a       | SNP      | Het      | g        | a        | <i>ENTPD8</i> | NM_001033113    | rs6606582  |
| chr9  | 140332478 | 140332479 | a       | SNP      | Het      | g        | a        | <i>ENTPD8</i> | NM_198585       | rs6606582  |

Table S1. Cont.

| Chrom | Left      | Right     | ref_seq | var_type | zygosity | var_seq1 | var_seq2 | Gene Name | Transcript Name | dbSNP      |
|-------|-----------|-----------|---------|----------|----------|----------|----------|-----------|-----------------|------------|
| chr9  | 140332668 | 140332669 | c       | SNP      | Het      | t        | c        | ENTPD8    | NM_001033113    |            |
| chr9  | 140332668 | 140332669 | c       | SNP      | Het      | t        | c        | ENTPD8    | NM_198585       |            |
| chr9  | 140356110 | 140356111 | a       | SNP      | Het      | c        | a        | PNPLA7    | NM_001098537    |            |
| chr9  | 140356110 | 140356111 | a       | SNP      | Het      | c        | a        | PNPLA7    | NM_152286       |            |
| chr9  | 140356374 | 140356375 | c       | SNP      | Hom      | a        | a        | PNPLA7    | NM_001098537    | rs4962240  |
| chr9  | 140356374 | 140356375 | c       | SNP      | Hom      | a        | a        | PNPLA7    | NM_152286       | rs4962240  |
| chr9  | 140356503 | 140356504 | c       | SNP      | Het      | a        | c        | PNPLA7    | NM_001098537    | rs41307436 |
| chr9  | 140356503 | 140356504 | c       | SNP      | Het      | a        | c        | PNPLA7    | NM_152286       | rs41307436 |
| chr9  | 140356807 | 140356808 | g       | SNP      | Het      | t        | g        | PNPLA7    | NM_001098537    |            |
| chr9  | 140356807 | 140356808 | g       | SNP      | Het      | t        | g        | PNPLA7    | NM_152286       |            |
| chr9  | 140357972 | 140357973 | a       | SNP      | Hom      | g        | g        | PNPLA7    | NM_001098537    | rs1891627  |
| chr9  | 140357972 | 140357973 | a       | SNP      | Hom      | g        | g        | PNPLA7    | NM_152286       | rs1891627  |
| chr9  | 140358121 | 140358122 | c       | SNP      | Het      | t        | c        | PNPLA7    | NM_001098537    |            |
| chr9  | 140358121 | 140358122 | c       | SNP      | Het      | t        | c        | PNPLA7    | NM_152286       |            |
| chr9  | 140361847 | 140361848 | g       | SNP      | Het      | a        | g        | PNPLA7    | NM_001098537    | rs61738892 |
| chr9  | 140361847 | 140361848 | g       | SNP      | Het      | a        | g        | PNPLA7    | NM_152286       | rs61738892 |
| chr9  | 140373556 | 140373557 | g       | SNP      | Het      | a        | g        | PNPLA7    | NM_001098537    |            |
| chr9  | 140373556 | 140373557 | g       | SNP      | Het      | a        | g        | PNPLA7    | NM_152286       |            |
| chr9  | 140373562 | 140373563 | g       | SNP      | Het      | a        | g        | PNPLA7    | NM_001098537    |            |
| chr9  | 140373562 | 140373563 | g       | SNP      | Het      | a        | g        | PNPLA7    | NM_152286       |            |
| chr9  | 140374861 | 140374862 | a       | SNP      | Hom      | g        | g        | PNPLA7    | NM_001098537    | rs1891630  |
| chr9  | 140374861 | 140374862 | a       | SNP      | Hom      | g        | g        | PNPLA7    | NM_152286       | rs1891630  |
| chr9  | 140378978 | 140378979 | a       | SNP      | Het      | g        | a        | PNPLA7    | NM_001098537    |            |
| chr9  | 140378978 | 140378979 | a       | SNP      | Het      | g        | a        | PNPLA7    | NM_152286       |            |
| chr9  | 140392494 | 140392495 | t       | SNP      | Het      | c        | t        | PNPLA7    | NM_001098537    | rs4962232  |

Table S1. Cont.

| Chrom | Left      | Right     | ref_seq | var_type | zygosity | var_seq1 | var_seq2 | Gene Name | Transcript Name | dbsnp      |
|-------|-----------|-----------|---------|----------|----------|----------|----------|-----------|-----------------|------------|
| chr9  | 140392494 | 140392495 | t       | SNP      | Het      | c        | t        | PNPLA7    | NM_152286       | rs4962232  |
| chr9  | 140395119 | 140395120 | g       | SNP      | Het      | a        | g        | PNPLA7    | NM_001098537    |            |
| chr9  | 140395119 | 140395120 | g       | SNP      | Het      | a        | g        | PNPLA7    | NM_152286       |            |
| chr9  | 140396006 | 140396007 | c       | SNP      | Het      | t        | c        | PNPLA7    | NM_001098537    |            |
| chr9  | 140396006 | 140396007 | c       | SNP      | Het      | t        | c        | PNPLA7    | NM_152286       |            |
| chr9  | 140396087 | 140396088 | c       | DEL      | Het      |          | c        | PNPLA7    | NM_001098537    |            |
| chr9  | 140396087 | 140396088 | c       | DEL      | Het      |          | c        | PNPLA7    | NM_152286       |            |
| chr9  | 140396212 | 140396213 | c       | SNP      | Het      | t        | c        | PNPLA7    | NM_001098537    | rs1891629  |
| chr9  | 140396212 | 140396213 | c       | SNP      | Het      | t        | c        | PNPLA7    | NM_152286       | rs1891629  |
| chr9  | 140399983 | 140399984 | t       | SNP      | Het      | c        | t        | PNPLA7    | NM_001098537    | rs7037200  |
| chr9  | 140399983 | 140399984 | t       | SNP      | Het      | c        | t        | PNPLA7    | NM_152286       | rs7037200  |
| chr9  | 140400275 | 140400276 | t       | SNP      | Het      | c        | t        | PNPLA7    | NM_001098537    | rs3750381  |
| chr9  | 140400275 | 140400276 | t       | SNP      | Het      | c        | t        | PNPLA7    | NM_152286       | rs3750381  |
| chr9  | 140400361 | 140400362 | g       | SNP      | Het      | a        | g        | PNPLA7    | NM_001098537    |            |
| chr9  | 140400361 | 140400362 | g       | SNP      | Het      | a        | g        | PNPLA7    | NM_152286       |            |
| chr9  | 140403817 | 140403818 | a       | SNP      | Het      | g        | a        | PNPLA7    | NM_001098537    | rs34204672 |
| chr9  | 140403817 | 140403818 | a       | SNP      | Het      | g        | a        | PNPLA7    | NM_152286       | rs34204672 |
| chr9  | 140403835 | 140403836 | c       | SNP      | Het      | t        | c        | PNPLA7    | NM_001098537    | rs35605405 |
| chr9  | 140403835 | 140403836 | c       | SNP      | Het      | t        | c        | PNPLA7    | NM_152286       | rs35605405 |
| chr9  | 140409726 | 140409727 | t       | SNP      | Hom      | c        | c        | PNPLA7    | NM_001098537    | rs843967   |
| chr9  | 140409726 | 140409727 | t       | SNP      | Hom      | c        | c        | PNPLA7    | NM_152286       | rs843967   |
| chr9  | 140440242 | 140440243 | c       | SNP      | Het      | t        | c        | PNPLA7    | NM_001098537    |            |
| chr9  | 140440242 | 140440243 | c       | SNP      | Het      | t        | c        | PNPLA7    | NM_152286       |            |

**Table S2.** Level of resistance to IDR in MOLT-3 and MOLT-3/IDR cells.

| MOLT-3                                                                             | $\beta$ ACTIN                             | GALNT2 Wild                               | GALNT2 Mutant                             |
|------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|
| Approximation                                                                      | $y = -3.3187x + 18.752$<br>$R^2 = 0.9998$ | $y = -3.3574x + 24.627$<br>$R^2 = 0.9986$ |                                           |
| PCR efficiency                                                                     | 1.001348901                               | 0.985406898                               |                                           |
| MOLT-3/IDR                                                                         | $\beta$ ACTIN                             | GALNT2 Wild                               | GALNT2 Mutant                             |
| Approximation                                                                      | $y = -3.2816x + 17.893$<br>$R^2 = 0.9956$ | $y = -3.3292x + 23.829$<br>$R^2 = 0.9899$ | $y = -3.2951x + 25.301$<br>$R^2 = 0.9999$ |
| PCR efficiency                                                                     | 1.017109154                               | 0.996974236                               | 1.011318861                               |
| Threshold Cycle ( $C_t$ )                                                          |                                           |                                           |                                           |
|                                                                                    | $\beta$ ACTIN                             | GALNT2 wild                               | GALNT2 mutant                             |
| MOLT-3                                                                             | 18.752                                    | 24.627                                    |                                           |
| MOLT-3/IDR                                                                         | 17.893                                    | 23.829                                    | 25.301                                    |
| $\Delta$ Threshold Cycle (Target $C_t$ ) – ( $\beta$ ACTIN $C_t$ )                 |                                           |                                           |                                           |
|                                                                                    | GALNT2 wild                               | GALNT2 mutant                             |                                           |
| MOLT-3                                                                             | 5.875                                     |                                           |                                           |
| MOLT-3/IDR                                                                         | 5.936                                     | 7.408                                     |                                           |
| $\Delta\Delta$ Threshold Cycle (MOLT-3/IDR $\Delta C_t$ ) – (MOLT-3 $\Delta C_t$ ) |                                           |                                           |                                           |
|                                                                                    | GALNT2 wild                               | GALNT2 mutant                             |                                           |
| MOLT-3                                                                             | 0                                         |                                           |                                           |
| MOLT-3/IDR                                                                         | 0.061 (=5.936–5.875)                      | 1.533 (=7.408–5.875)                      |                                           |
| <b>Quantitative Expression Analysis Using Real-Time PCR of the GALNT2 Gene</b>     |                                           |                                           |                                           |
|                                                                                    | GALNT2 wild                               | GALNT2 mutant                             |                                           |
| MOLT-3                                                                             | 1                                         | N.D. (Not Detected)                       |                                           |
| MOLT-3/IDR                                                                         | 0.96                                      | 0.35                                      |                                           |

**Table S3.** Primers used for real-time PCR and RT-PCR.

| Primer Name     | Real-Time PCR Primer Sequence |
|-----------------|-------------------------------|
| GALNT2-wild_F   | 5'-CGCTCAACCTGCAGCAGTAG-3'    |
| GALNT2-mutant_F | 5'-ACGCTCAACCTGCAGCAGTAT-3'   |
| GALNT2-Rev      | 5'-CTTGCCGAAGTTTGACTTTCAG-3'  |
| Primer Name     | RT-PCR Primer Sequence        |
| GALNT2-L1       | 5'-CCTAAGCGTGGAGGTGTGTG-3'    |
| GALNT2-L2       | 5'-CGCTCAACCTGCAGCAGTAT-3'    |
| GALNT2-Rev      | 5'-CTTGCCGAAGTTTGACTTTCAG-3'  |

**Table S4.** Level of resistance to IDR in MOLT-3 and MOLT-3/IDR cells.

| Drug Name  | MOLT-3 | MOLT-3/ IDR | Degree of Resistance |
|------------|--------|-------------|----------------------|
| Idarubicin | 25 nM  | 250 nM      | 10-fold              |

**Table S5.** PCR primers used to amplify mtDNA sequences.

| Primer Name    | Forward/Reverse | Primer Sequence                      |
|----------------|-----------------|--------------------------------------|
| homoF1         | F               | 5'-AGGACTATTCCTAGCCATGCACTACTCA-3'   |
| homoR1         | R               | 5'-AAATAATAGGATGAGGCAGGAATCAAAGAC-3' |
| homoF2         | F               | 5'-GAACTGTATCCGACATCTGGTTCCTACT-3'   |
| homoR2         | R               | 5'-TTTAGCTCAGAGCGGTCAAGTTAAGTTG-3'   |
| homoF3         | F               | 5'-TATGAAACTTAAGGGTCGAAGGTGGATT-3'   |
| homoR3         | R               | 5'-GCCATCTTAACAAACCCTGTTCTTG-3'      |
| homoF4         | F               | 5'-ATCCAATAACTTGACCAACGGAACA-3'      |
| homoR4         | R               | 5'-AAGGATTATGGATGCGGTTGCTT-3'        |
| homoF5         | F               | 5'-CCACCTATCACACCCCATCCTAA-3'        |
| homoR5         | R               | 5'-CAGTTGCCAAAGCCTCCGATT-3'          |
| homoF6         | F               | 5'-CAATGCTTCACTCAGCCATTTTACCT-3'     |
| homoR6         | R               | 5'-TGTAGACCTACTTGCGCTGCATGT-3'       |
| homoF7         | F               | 5'-GATGCATACACCACATGAAACATCCTA-3'    |
| homoR7         | R               | 5'-GTGATTGGTGGGTCATTATGTGTTGT-3'     |
| homoF8         | F               | 5'-ACTTCTTACCACAAGGCACACCTACA-3'     |
| homoR8         | R               | 5'-GGCAATAGGCACAATATTGGCTAAGA-3'     |
| homoF9         | F               | 5'-GATAATCATATTTACCAATGCCCTCATT-3'   |
| homoR9         | R               | 5'-GCAGTTCTTGTGAGCTTTCTCGGTAA-3'     |
| homoF10        | F               | 5'-CACTCACCCACCACATTAACAACA-3'       |
| homoR10        | R               | 5'-GGCTGTTAGAAGTCCTAGGAAAGTGACAG-3'  |
| homoF11        | F               | 5'-GCATTAGCAGGAATACCTTTCTCACA-3'     |
| homoR11        | R               | 5'-CAAGAATAGGAGGTGGAGTGCTGCTA-3'     |
| Homo_mt_Gap_1F | F               | 5'-GGCCACCAATGGTACTGAAC-3'           |
| Homo_mt_Gap_1R | R               | 5'-GCAATGAATGAAGCGAACAG-3'           |
| Homo_mt_Gap_2F | F               | 5'-TTAGACTGAGCCGAATTGGT-3'           |
| Homo_mt_Gap_2R | R               | 5'-AGCCTCTGTTGTCAGATCCA-3'           |
| Homo_mt_Gap_3F | F               | 5'-TCGGAGGACAACCAGTAAGC-3'           |
| Homo_mt_Gap_3R | R               | 5'-GCACTCTTGTGCGGGATATT-3'           |
| HUMmt-148F     | F               | 5'-ATCCCATTATTTATCGCACCT-3'          |
| HUMmt-1038R    | R               | 5'-CTATTGTGTGTTTCAGATATGTT-3'        |
| HUMmt-1038F    | F               | 5'-ACATATCTGAACACACAATAGCT-3'        |
| HUMmt-1914F    | R               | 5'-AGACGAGCTACCTAAGAACAGCT-3'        |
| HUMmt-2022R    | F               | 5'-AACTAAGATTCTATCTTGGACA-3'         |
| HUMmt-2850R    | R               | 5'-TGGTGAAGTCTTAGCATGTACT-3'         |
| HUMmt-4885F    | F               | 5'-ATCTCAATCATATACCAAATCT-3'         |
| HUMmt-5606R    | R               | 5'-ATTGCGTTCAGTTGATGCAGA-3'          |
| HUMmt-13601F   | F               | 5'-TATAGCACTCGAATAATTCTT-3'          |
| HUMmt-14133F   | F               | 5'-ACTCCTAATCACATAACCTATT-3'         |
| HUMmt-14201R   | R               | 5'-TGATTAGTAGTAGTTACTGGTT-3'         |
| HUMmt-15052R   | R               | 5'-AGTAGAGAAATGATCCGTAATA-3'         |
| F817-837       | F               | 5'-GGGAAACAGCAGTGATTAACC-3'          |
| R1235-1255     | R               | 5'-CAAGAGGTGGTGAGGTTGATC-3'          |
| F1557-1579     | F               | 5'-GAGGAGACAAGTCGTAACATGGT-3'        |
| R2341-2360     | R               | 5'-ATCTGACGCAGGCTTATGC-3'            |
| F2592-2613     | F               | 5'-CGTGCAAAGGTAGCATAATCAC-3'         |
| R3071-3091     | R               | 5'-ACTCCGGTCTGAACTCAGATC-3'          |
| F5536-5556     | F               | 5'-ACAGACCAAGAGCCTTCAAAG-3'          |
| R6015-6032     | R               | 5'-AGCTCGGCTCGAATAAGG-3'             |
| F6818-6838     | F               | 5'-CATATTTACCTCCGCTACCA-3'           |
| R7419-7440     | R               | 5'-GTATACGGGTTCTTCGAATGTG-3'         |