

# Discovery of novel inhibitors targeting multi-UDP-hexose pyrophosphorylases as anticancer agents

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**Supplementary Table S1.** Nucleotide sequence of primers used for *GALE*, *UGDH* and *AGX1/UAP1* Cloning.

| Gene Name        | Genbank Accession | Primer  | Primer sequence (5'-3')                 |
|------------------|-------------------|---------|---|
| <i>GALE</i>      | NM_000403.3       | Forward | CATTTCGATATCTCAGATCTATGGCAGAGAAGGTGCTGG |
|                  |                   | Reverse | TGAACCTCGAGCTATCAGGCTTGCGTGCCAA         |
| <i>UGDH</i>      | NM_003359.4       | Forward | CATTCTGATCAATGTTTGAAATTAAGAAGATCTGTTGC  |
|                  |                   | Reverse | TGAACCTCGAGCTACTACACTTTAGGTTTCTTGTTAGGT |
| <i>AGX1/UAP1</i> | NM_001324116.1    | Forward | CATTTCGGATCCATGAACATTAATGACCTCAAACCTCA  |
|                  |                   | Reverse | TGAACGTCGACCTATCAAATACCATTTTTCACCAGCT   |

**Supplementary Table S2.** siRNA nucleotide sequence.

| <b>siRNA Name</b>        |                 | <b>Sequence (5'-3')</b> |
|--------------------------|-----------------|-------------------------|
| <b>siRNA <i>GALT</i></b> | Sense           | GGCACUCCUGAGGUUCAUTT    |
|                          | Anti-sense      | AUGAACCUCAGGAAGUGCCTT   |
| <b>siRNA <i>UGP2</i></b> | Sense           | GAAGGUUCAAGAUUAUCUATT   |
|                          | Anti-sense      | UAGAUAAUCUUGAACCUUCGT   |
| <b>siRNA <i>AGX1</i></b> | Sense           | GCAACAGCUCAAAAACGAATT   |
|                          | Anti-sense      | UUCGUUUUUGAGCUGUUGCCA   |
| <b>siRNA Control</b>     | Cat. No. AM4613 | Life technologies       |

**Supplementary Table S3.** Nucleotide sequence of primers used for RT-PCR.

| <b>Primer Name</b>   | <b>Primer sequence (5'-3')</b> |
|----------------------|--------------------------------|
| <b>GALT Forward</b>  | AAATGCTTGCTCAGGCTCAGA          |
| <b>GALT Reverse</b>  | ACCTCAGGAAGTGCCCTTAG           |
| <b>UGP2 Forward</b>  | CCTTCTGTGGATTGGGGAAA           |
| <b>UGP2 Reverse</b>  | AGCCCCTGGCCTTTATCTTT           |
| <b>UAP1 Forward</b>  | CAAGGGATCAAGATCAGCTCCA         |
| <b>UAP1 Reverse</b>  | CCCTGCCCACCAGCTAGAAG           |
| <b>GAPDH Forward</b> | CCATGGGGAAGGTGAAGGTC           |
| <b>GAPDH Reverse</b> | AGTTAAAAGCAGCCCTGGTGA          |

**Supplementary Table S4.** Enzymatic Activity (25  $\mu$ M GAL-012) as % of vehicle (DMSO).

|                | <b>Vehicle</b> | <b>GALT</b> | <b>GALE</b> | <b>UGP2</b> | <b>UGDH</b> | <b>AGX1/UAP1</b> |
|----------------|----------------|-------------|-------------|-------------|-------------|------------------|
| <b>GAL-012</b> | 100%           | 63.20%      | 100%        | 58.46%      | 100%        | 56.45%           |