

**Table S1.** Optimal reference gene and expression stability values (M value) of the candidate reference miRNAs calculated by geNorm (ranking in parentheses).

| Sample source | miR-103      | miR-106a     | miR-148a     | miR-17-3P    | miR-191      | miR-451      | miR-92a      | miR-16       | miR-25       | miR-26a      | miR-335      | let-7b-5p    | miR-93       | U6           | miR-17-5P    | let-7a       |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Mean ± SD     |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| URBP          | 36.35 ± 0.13 | 34.59 ± 0.06 | 34.27 ± 0.23 | 37.51 ± 0.07 | 34.83 ± 0.02 | 31.18 ± 0.10 | 35.70 ± 0.13 | 32.81 ± 0.04 | 37.65 ± 0.05 | 37.16 ± 0.06 | 38.25 ± 0.13 | 38.37 ± 0.04 | 35.41 ± 0.15 | 29.19 ± 0.05 | 33.28 ± 0.10 | 33.39 ± 0.17 |
| UVBP          | 30.28 ± 0.14 | 28.52 ± 0.08 | 28.99 ± 0.07 | 35.21 ± 0.09 | 32.19 ± 0.03 | 25.56 ± 0.11 | 30.53 ± 0.13 | 33.17 ± 0.11 | 31.03 ± 0.01 | 33.73 ± 0.16 | 37.59 ± 0.15 | 35.33 ± 0.08 | 30.14 ± 0.08 | 29.64 ± 0.07 | 33.41 ± 0.02 | 33.54 ± 0.17 |
| PBS           | 37.45 ± 0.12 | 33.81 ± 0.15 | 35.43 ± 0.19 | 34.12 ± 0.09 | 34.36 ± 0.18 | 28.85 ± 0.13 | 36.85 ± 0.07 | 36.20 ± 0.06 | 34.32 ± 0.06 | 37.05 ± 0.02 | 36.05 ± 0.03 | 38.07 ± 0.07 | 35.51 ± 0.12 | 29.37 ± 0.01 | 33.64 ± 0.06 | 34.21 ± 0.05 |
| Ordinary milk | 25.52 ± 0.03 | 24.62 ± 0.03 | 22.73 ± 0.02 | 30.46 ± 0.15 | 23.27 ± 0.05 | 29.18 ± 0.05 | 24.56 ± 0.03 | 27.94 ± 0.07 | 24.84 ± 0.09 | 26.13 ± 0.02 | 36.11 ± 0.08 | 24.41 ± 0.03 | 25.10 ± 0.04 | 22.97 ± 0.07 | 24.38 ± 0.12 | 23.24 ± 0.11 |
| Colostrum     | 33.07 ± 0.13 | 31.69 ± 0.04 | 31.79 ± 0.12 | 39.55 ± 0.16 | 31.69 ± 0.13 | 31.14 ± 0.01 | 32.89 ± 0.06 | 36.31 ± 0.01 | 33.29 ± 0.11 | 33.98 ± 0.07 | 37.58 ± 0.14 | 32.99 ± 0.01 | 33.23 ± 0.11 | 28.39 ± 0.04 | 30.10 ± 0.04 | 27.26 ± 0.14 |
| Semen         | 35.10 ± 0.02 | 37.27 ± 0.13 | 33.03 ± 0.04 | 39.57 ± 0.09 | 34.53 ± 0.14 | 31.76 ± 0.04 | 34.15 ± 0.05 | 38.49 ± 0.14 | 34.42 ± 0.06 | 35.28 ± 0.07 | 36.11 ± 0.09 | 32.47 ± 0.13 | 34.91 ± 0.12 | 32.43 ± 0.14 | 32.43 ± 0.14 | 29.50 ± 0.11 |
| Urine         | 37.45 ± 0.15 | 36.20 ± 0.05 | 36.36 ± 0.13 | 33.47 ± 0.18 | 37.31 ± 0.01 | 33.2 ± 0.05  | 38.54 ± 0.01 | 39.49 ± 0.14 | 38.21 ± 0.15 | 36.19 ± 0.03 | 36.92 ± 0.12 | 37.77 ± 0.06 | 38.48 ± 0.06 | 32.47 ± 0.18 | 32.47 ± 0.18 | 33.41 ± 0.15 |
| Bile          | 33.38 ± 0.05 | 34.14 ± 0.07 | 36.19 ± 0.18 | 38.43 ± 0.13 | 33.65 ± 0.13 | 33.49 ± 0.17 | 36.09 ± 0.08 | 38.38 ± 0.10 | 36.27 ± 0.15 | 35.99 ± 0.08 | 38.80 ± 0.10 | 34.16 ± 0.02 | 34.35 ± 0.03 | 32.01 ± 0.07 | 34.05 ± 0.05 | 31.25 ± 0.09 |
| Bladder fluid | 36.03 ± 0.04 | 33.58 ± 0.08 | 36.26 ± 0.09 | 36.12 ± 0.10 | 33.46 ± 0.02 | 32.44 ± 0.07 | 35.80 ± 0.03 | 36.47 ± 0.04 | 36.89 ± 0.12 | 35.05 ± 0.09 | 35.43 ± 0.09 | 36.21 ± 0.09 | 35.27 ± 0.15 | 29.14 ± 0.02 | 30.66 ± 0.06 | 32.12 ± 0.09 |
| Gastric juice | 32.79 ± 0.14 | 31.15 ± 0.02 | 32.62 ± 0.05 | 38.31 ± 0.10 | 33.54 ± 0.16 | 24.13 ± 0.01 | 32.26 ± 0.04 | 32.93 ± 0.08 | 30.22 ± 0.06 | 34.18 ± 0.13 | 38.75 ± 0.15 | 30.10 ± 0.09 | 32.39 ± 0.02 | 28.83 ± 0.03 | 30.98 ± 0.06 | 29.08 ± 0.04 |

**Abbreviations:** URBP: Umbilical Arterial Blood Plasma; UVBP: Umbilical Venous Blood Plasma; PBS: Peripheral Blood Serum

**Table S2.** Optimal reference gene and expression stability values (M value) of the candidate reference miRNAs calculated by geNorm (ranking in parentheses).

|                        | URBP      | UVBP      | PBS       | Ordinary milk | Colostrum | Semen     | Urine     | Bile      | Bladder fluid | Gastric juice | The average rank in all | Average rank in blood | Average rank of body fluids in vitro | Average rank of body fluids in vivo |
|------------------------|-----------|-----------|-----------|---------------|-----------|-----------|-----------|-----------|---------------|---------------|-------------------------|-----------------------|--------------------------------------|-------------------------------------|
| Optimal reference gene | miR-25    | let-7b-5p | miR-26a   | miR-148a      | miR-451   | miR-103   | miR-191   | let-7b-5p | miR-191       | miR-17-5P     |                         |                       |                                      |                                     |
|                        | let-7b-5p | miR-93    | miR-335   | miR-17-5P     | miR-16    | miR-451   | miR-92a   | miR-93    | miR-16        | miR-93        |                         |                       |                                      |                                     |
| miR-148a               | 0.13 (15) | 0.08 (9)  | 0.13 (15) | 0.01 (1)*     | 0.06 (8)  | 0.06 (5)  | 0.08 (9)  | 0.13 (15) | 0.09 (13)     | 0.04 (8)      | 9.8                     | 13                    | 5.75                                 | 12                                  |
| miR-92a                | 0.11 (14) | 0.09 (11) | 0.06 (7)  | 0.02 (3)      | 0.04 (5)  | 0.05 (4)  | 0.01 (1)  | 0.08 (6)  | 0.03 (3)      | 0.03 (4)      | 5.8                     | 10.67                 | 3.25                                 | 4.33                                |
| miR-93                 | 0.10 (13) | 0.02 (1)* | 0.10 (12) | 0.03 (7)      | 0.06 (7)  | 0.07 (7)  | 0.04 (4)  | 0.04 (1)* | 0.11 (15)     | 0.02 (1)*     | 6.8                     | 8.67                  | 6.25                                 | 5.67                                |
| miR-103                | 0.10 (12) | 1.12 (15) | 0.08 (10) | 0.03 (5)      | 0.07 (9)  | 0.02 (1)* | 0.14 (15) | 0.06 (4)  | 0.03 (4)      | 0.08 (12)     | 8.7                     | 12.33                 | 7.5                                  | 6.67                                |
| miR-335                | 0.09 (11) | 0.10 (12) | 0.01 (1)* | 0.07 (14)     | 0.12 (15) | 0.09 (10) | 0.07 (8)  | 0.07 (5)  | 0.08 (9)      | 0.10 (14)     | 9.9                     | 8                     | 11.75                                | 9.33                                |
| let-7a                 | 0.08 (10) | 0.07 (6)  | 0.03 (3)  | 0.06 (13)     | 0.09 (11) | 0.11 (14) | 0.09 (10) | 0.04 (2)  | 0.04 (5)      | 0.04 (7)      | 8.5                     | 6.33                  | 13                                   | 4.67                                |
| miR-451                | 0.07 (9)  | 0.03 (2)  | 0.09 (11) | 0.02 (4)      | 0.01 (1)* | 0.02 (1)* | 0.03 (3)  | 0.12 (14) | 0.06 (6)      | 0.02 (3)      | 5.40*                   | 7.33                  | 2.25*                                | 7.67                                |

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|           |           |           |           |           |           |           |           |           |           |           |      |       |      |       |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|-------|------|-------|
| miR-17-3P | 0.06 (8)  | 0.05 (3)  | 0.07 (9)  | 0.08 (15) | 0.11 (14) | 0.06 (6)  | 0.12 (13) | 0.11 (12) | 0.08 (10) | 0.07 (11) | 10.1 | 6.67  | 12   | 11    |
| miR-106a  | 0.06 (7)  | 0.06 (4)  | 0.11 (13) | 0.01 (2)  | 0.03 (4)  | 0.08 (8)  | 0.05 (7)  | 0.09 (7)  | 0.07 (7)  | 0.02 (2)  | 6.1  | 8     | 5.25 | 5.33  |
| U6        | 0.05 (6)  | 0.08 (7)  | 0.02 (2)  | 0.05 (10) | 0.02 (3)  | 0.09 (9)  | 0.13 (14) | 0.05 (3)  | 0.02 (2)  | 0.03 (5)  | 6.1  | 5     | 9    | 3.33* |
| miR-16    | 0.05 (5)  | 0.09 (10) | 0.06 (8)  | 0.06 (12) | 0.01 (1)* | 0.10 (11) | 0.11 (12) | 0.10 (9)  | 0.02 (1)* | 0.05 (9)  | 7.8  | 7.67  | 9    | 6.33  |
| miR-17-5P | 0.04 (4)  | 0.10 (13) | 0.04 (5)  | 0.01 (1)* | 0.04 (6)  | 0.11 (13) | 0.01 (2)  | 0.10 (10) | 0.10 (14) | 0.02 (1)* | 6.9  | 7.33  | 5.5  | 8.33  |
| miR-26a   | 0.04 (3)  | 0.11 (14) | 0.01 (1)* | 0.04 (8)  | 0.08 (10) | 0.04 (3)  | 0.04 (6)  | 0.09 (8)  | 0.07 (8)  | 0.09 (13) | 7.4  | 6     | 6.75 | 9.67  |
| miR-191   | 0.03 (2)  | 0.08 (8)  | 0.12 (14) | 0.04 (9)  | 0.10 (13) | 0.10 (12) | 0.01 (1)* | 0.10 (11) | 0.02 (1)* | 0.11 (15) | 8.6  | 8     | 8.75 | 9     |
| miR-25    | 0.02 (1)* | 0.07 (5)  | 0.04 (4)  | 0.05 (11) | 0.09 (12) | 0.04 (2)  | 0.10 (11) | 0.11 (13) | 0.09 (12) | 0.04 (6)  | 7.7  | 3.33  | 9    | 10.33 |
| let-7b-5p | 0.02 (1)* | 0.02 (1)* | 0.05 (6)  | 0.03 (6)  | 0.01 (2)  | 0.12 (15) | 0.04 (5)  | 0.04 (1)* | 0.08 (11) | 0.06 (10) | 5.8  | 2.67* | 7    | 7.33  |

**Note:** \* represents the miRNA with stability ranking the first.

**Abbreviations:** URBP: Umbilical Arterial Blood Plasma; UVBP: Umbilical Venous Blood Plasma; PBS: Peripheral Blood Serum