Supplementary File S1: The sequences employed for molecular phylogenetic analysis (Figure S5)
| Species               | Value | Description                      |
|----------------------|-------|----------------------------------|
| Escherichia          | 324   | PALLA-----------------------------|
| GLUT12_Homo         | 36    | -------------------------------|
| GLUT3_Homo          | 3     | -------------------------------|
| GLUT11_Homo         | 20    | -------------------------------|
| GLUT2_Mus           | 63    | -------------------------------|
| GLUT3_Homo          | 10    | -------------------------------|
| GLUT4_Homo          | 24    | -------------------------------|
| GLUT1_Mus           | 12    | -------------------------------|
| GLUT9_Homo          | 52    | -------------------------------|
| GLUT5_Homo          | 13    | -------------------------------|
| GLUT7_Homo          | 19    | -------------------------------|
| Halycomorpha        | 116   | -------------------------------|
| Bemisia             | 160   | SGGI-----------------------------|
| Cimex                | 1     | -------------------------------|
| Rhodnius            | 39    | -------------------------------|
| Cinara               | 214   | NTTKI-----------------------------|
| Sipha                | 160   | TAVKI-----------------------------|
| Melanaphis          | 189   | SAKI-----------------------------|
| Acyrisphodon        | 187   | SAAKI-----------------------------|
| Diuraphis           | 246   | RTQN-----------------------------|
| Myzus                | 182   | SAKI-----------------------------|
| Rhopalosiphon       | 165   | SAKI-----------------------------|
| Aphis                | 163   | SAKI-----------------------------|
| Athalia              | 154   | FQAEV-----------------------------|
| Cephus               | 160   | FQRE-----------------------------|
| Megachile           | 135   | STGKI-----------------------------|
| Bombus               | 159   | -------------------------------|
| Bitvella            | 127   | -------------------------------|
| Cryptotermes        | 178   | -------------------------------|
| Nilaparvata         | 162   | SLA-----------------------------|
| Drosophila          | 24    | -------------------------------|
| Culex                | 39    | -------------------------------|
| Anopheles           | 39    | -------------------------------|
| Ceratites           | 24    | -------------------------------|
| Lucilia              | 301   | KPVIIDLKDLEESEEDYVSRQHFQQQSR1STDERSKEDEMEGSKKGENLRSAVPFVRQITEDGKPKLKEYRPSTTT|
| Musca                | 292   | KPVIIIDLKDLEESEEDYVSRQHFQQQSR1STDERSKEDEMEGSKKGENLRSAVPFVRQITEDGKPKLKEYRPSTTT|
| Stomoxys            | 295   | KPLVIIIDLKDLEESEEDYVSRQHFQQQSR1STDERSKEDEMEGSKKGENLRSAVPFVRQITEDGKPKLKEYRPSTTT|
| GLUT10_Homo         | 33    | -------------------------------|
| GLUT8_Mus           | 25    | -------------------------------|

| Escherichia          | 251   | RIVPDV-----------------------------|
| GLUT12_Homo         | 36    | -------------------------------|
| GLUT10_Homo         | 3     | -------------------------------|
| GLUT11_Homo         | 20    | -------------------------------|
| GLUT2_Mus           | 63    | -------------------------------|
| GLUT3_Homo          | 10    | -------------------------------|
| GLUT4_Homo          | 24    | -------------------------------|
| GLUT1_Mus           | 12    | -------------------------------|
| GLUT9_Homo          | 52    | -------------------------------|
| GLUT5_Homo          | 19    | -------------------------------|
| Bemisia             | 176   | SII-----------------------------|
| Cimex                | 1     | -------------------------------|
| Rhodnius            | 39    | -------------------------------|
| Cinara               | 21    | -------------------------------|
| Sipha                | 170   | -------------------------------|
| Melanaphis          | 199   | -------------------------------|
| Acyrisphodon        | 196   | -------------------------------|
| Diuraphis           | 192   | -------------------------------|
| Myzus                | 193   | -------------------------------|
| Rhopalosiphon       | 175   | -------------------------------|
| Aphis                | 173   | -------------------------------|
| Athalia              | 165   | -------------------------------|
| Cephus               | 170   | -------------------------------|
| Megachile           | 152   | -------------------------------|
| Bombus               | 159   | -------------------------------|
| Bitvella            | 127   | -------------------------------|
| Cryptotermes        | 178   | -------------------------------|
| Nilaparvata         | 162   | -------------------------------|
| Drosophila          | 24    | -------------------------------|
| Culex                | 39    | -------------------------------|
| Anopheles           | 39    | -------------------------------|
| Ceratites           | 24    | -------------------------------|
| Lucilia              | 381   | -------------------------------|
| Musca                | 372   | -------------------------------|
| Stomoxys            | 375   | -------------------------------|
| GLUT                | 34    | -------------------------------|
| GLT8_Mus            | 25    | -------------------------------|

**Alignment: 35 STGKI**
| Species          | Accession Numbers |
|------------------|-------------------|
| Escherichia      | 309               |
| GLUT12_Homo      | 93                |
| GLUT8_Mus        | 88                |
| GLUT2_Mus        | 110               |
| GLUT3_Homo       | 77                |
| GLUT4_Homo       | 95                |
| GLUT11_Homo      | 88                |
| GLUT5_Homo       | 85                |
| GLUT7_Homo       | 91                |
| Halyomorpha      | 176               |
| Betula           | 238               |
| Rhodnius         | 99                |
| Cinara           | 284               |
| Sipha            | 230               |
| Melanaphis       | 259               |
| Acyrtosiphon     | 257               |
| Diuraphis        | 252               |
| Myzus            | 253               |
| Rhopalosipham    | 235               |
| Aphis            | 233               |
| Athalia          | 224               |
| Cephus           | 231               |
| Megachile        | 216               |
| Bembix           | 187               |
| Cryptotermes     | 238               |
| Nilaparvata      | 225               |
| Drosophila       | 85                |
| Culex            | 113               |
| Anopheles        | 100               |
| Ceratitis        | 85                |
| Lucilia          | 445               |
| Musca            | 436               |
| Stomoxys         | 439               |
| GLUT8_Mus        | 83                |

| Species          | Accession Numbers |
|------------------|-------------------|
| Escherichia      | 388               |
| GLUT12_Homo      | 139               |
| GLUT10_Homo      | 107               |
| GLUT11_Homo      | 137               |
| GLUT2_Mus        | 159               |
| GLUT3_Homo       | 126               |
| GLUT4_Homo       | 144               |
| GLUT11_Homo      | 173               |
| GLUT7_Homo       | 140               |
| Halyomorpha      | 222               |
| Betula           | 60                |
| Rhodnius         | 145               |
| Cinara           | 330               |
| Sipha            | 276               |
| Melanaphis       | 305               |
| Acyrtosiphon     | 303               |
| Diuraphis        | 298               |
| Myzus            | 299               |
| Rhopalosipham    | 281               |
| Aphis            | 279               |
| Athalia          | 270               |
| Cephus           | 277               |
| Megachile        | 262               |
| Bembix           | 266               |
| Cryptotermes     | 284               |
| Nilaparvata      | 225               |
| Drosophila       | 271               |
| Culex            | 159               |
| Anopheles        | 146               |
| Ceratitis        | 131               |
| Lucilia          | 491               |
| Musca            | 482               |
| Stomoxys         | 485               |
| GLUT             | 141               |
| GLUT8_Mus        | 129               |
**Supplementary File S2:** Columns are: VectorBase code—the official gene number in the RproC3 genome assembly; OV_FC, OV_UFC, FB_FC, FB_UFC show the readcount after normalization. Log2FoldChange: log2 (fed condition/unfed condition); p-adj: p-value after normalization (the smaller the p-adj, the more significant the difference). Transcripts highlights in red: trehalose transporters. FB_FC, fat body in FC; FB_UFC, fat body in UFC; OV_FC, ovary in FC; OV_UFC, ovary in UFC.
| Gene_id      | Suggested identity (by BLASTp)                  | OV_F   | OV_UF   | log₂FoldChange | padj    |
|-------------|-----------------------------------------------|--------|---------|----------------|---------|
| RPRC002241  | facilitated glucose transporter               | 1.484333 | 0.546686 | 1.441          | 0.86967 |
| RPRC002688  | facilitated trehalose transporter            | 146.231 | 174.1264 | -0.25189       | 0.4134  |
| RPRC002833  | facilitated trehalose transporter            | 1020.189 | 581.5957 | 0.81075        | 4.84E-07 |
| RPRC004616  | facilitated glucose transporter               | 17.57322 | 11.17511 | 0.65309        | 0.52979 |
| RPRC005613  | facilitated trehalose transporter            | 2677.428 | 1658.913 | 0.69061        | 0.03631 |
| RPRC010167  | facilitated glucose transporter               | 0       | 0       | NA             | NA      |
| RPRC010168  | facilitated glucose transporter               | 0       | 0       | NA             | NA      |
| RPRC011096  | facilitated glucose transporter               | 0       | 0       | NA             | NA      |
| RPRC011385  | facilitated trehalose transporter            | 77.03544 | 71.30437 | 0.11153        | 0.87263 |
| RPRC011469  | ribonuclease P protein subunit               | 1499.828 | 1271.66  | 0.23808        | 0.1685  |
| RPRC014535  | facilitated glucose transporter               | 308.1095 | 339.9465 | -0.14186       | 0.6825  |
| RPRC015169  | facilitated trehalose transporter            | 1.998917 | 12.06625 | -2.5937        | 0.02998 |
| RPRC007957  | facilitated trehalose transporter            | 1730.754 | 22.9776  | 6.235          | 5.28E-43 |

| Gene_id      | Suggested identity (by BLASTp)                  | FB_FC  | FB_UFC  | log₂FoldChange | padj    |
|-------------|-----------------------------------------------|--------|---------|----------------|---------|
| RPRC002241  | facilitated glucose transporter               | 0      | 0       | NA             | NA      |
| RPRC002688  | facilitated trehalose transporter            | 9.556347 | 10.04905 | -0.072528      | 1       |
| RPRC002833  | facilitated trehalose transporter            | 6.674395 | 10.1139  | -0.59963       | 0.77413 |
| RPRC004616  | facilitated glucose transporter               | 2.161835 | 3.248373 | -0.58746       | 0.99291 |
| RPRC005613  | facilitated trehalose transporter            | 3160.701 | 2329.008 | 0.44053        | 0.84978 |
| RPRC010167  | facilitated glucose transporter               | 0      | 0       | NA             | NA      |
| RPRC010168  | facilitated glucose transporter               | 0      | 0       | NA             | NA      |
| RPRC011096  | facilitated glucose transporter               | 0      | 0       | NA             | NA      |
| RPRC011385  | facilitated trehalose transporter            | 2178.7 | 1839.659 | 0.24403        | 0.86874 |
| RPRC011469  | ribonuclease P protein subunit               | 95.04148 | 63.0561  | 0.59192        | 0.2874  |
| RPRC014535  | facilitated glucose transporter               | 429.4323 | 361.5216 | 0.24835        | 0.77178 |
| RPRC015169  | facilitated trehalose transporter            | 7.36546 | 0 Inf   | 0.02565        |         |
| RPRC007957  | facilitated trehalose transporter            | 1801.396 | 268.3714 | 2.7468         | 3.85E-05 |
Supplementary File S3: The sequences employed for phylogenetic analysis (Figure S4).
