|  |
| --- |
| **Glycolysis** |
| 1. | Aerobic glycolysisGlc*out* + O2 →2 Pyr*out*(GlcT*plasmamembrane*, GlcT*glycosomal membrane*, HXK*g*, PGI, PFK, ALD, TPI, 2 GAPDH, 2 PGK, 2 PGAT, 2 PGAM, 2 ENO, 2 PYK, 2 PyrT, 2 GDH, 2 DHAP:Gly-3-P antiporter, 2 GPO, 2 ATP utilization) |
| 2. | Anaerobic glycolysisGlc*out* →Pyr*out* + Gly*out*(GlcT*plasmamembrane*, GlcT*glycosomal membrane*, HXK*g*, PGI, PFK, ALD, GAPDH, PGK, PGAT, PGAM, ENO, PYK, PyrT, GDH, GK, ATP utilization) |
| 3. | Glycerol oxidationGly*out* + O2 → Pyr*out*(TPI, GAPDH, PGK, PGAT, PGAM, ENO, PYK, PyrT, GDH, 2 DHAP:Gly-3-P antiporter, 2 GPO, ‑GK, ATP utilization) |
| **Glycolysis + glycosomal PPP + Ribokinase** |
| Modes 1–3 plus: |
| 4. | Glycosomal PPPGlc*out* → Rib*out* + CO2(GlcT*plasmamembrane*, GlcT*glycosomal membrane*, HXK*g*, G6PDH, PGL, 6PGDH, PPI, 2 NADPH oxidation, RK) |
| **Glycolysis + glycosomal PPP + ATP transport** |
| Modes 1–3 plus: |
| 5. | Aerobic glycolysis plus PPP3 Glc*out*+ O2 → 2 Pyr*out* + 2 Rib-5-P*g* +CO2(3 GlcT*plasmamembrane*, 3 GlcT*glycosomal membrane*, 3 HXK*g*, PGI, PFK, ALD, TPI, 2 GAPDH, 2 PGK, 2 PGAT, 2 PGAM, 2 ENO, 2 PYK, 2 PyrT, 2 GDH, 2 DHAP-Gly-3-P antiporter, 2 GPO, 2 G6PDH, 2 PGL, 2 6PGDH, 2 PPI, 4 NADPH oxidation, 2 ATP:ADP antiporter) |
| 6. | Anaerobic glycolysis plus PPP2 Glc*out* → Pyr*out* + Gly*out* + Rib-5-P*g* + CO2(2 GlcT*plasmamembrane*, 2 GlcT*glycosomal membrane*, 2 HXK*g*, PGI, PFK, ALD, GAPDH, PGK, PGAT PGAM, ENO, PYK, PyrT, GDH, GK, G6PDH, PGL, 6PGDH, PPI, 2 NADPH oxidation, ATP:ADP antiporter) |
| 7. | Glycerol oxidation plus PPPGly*out* + O2 + Glc*out* → Pyr*out* + Rib-5-P*g* + CO2(GlcT*plasmamembrane*, GlcT*glycosomal membrane*, HXK, TPI, GAPDH, PGK, PGAT, PGAM, ENO, PYK, PyrT, GDH, 2 DHAP:Gly-3-P antiporter, 2 GPO, -GK, G6PDH, PGL, 6PGDH, PPI, 2 NADPH oxidation, ATP:ADP antiporter) |