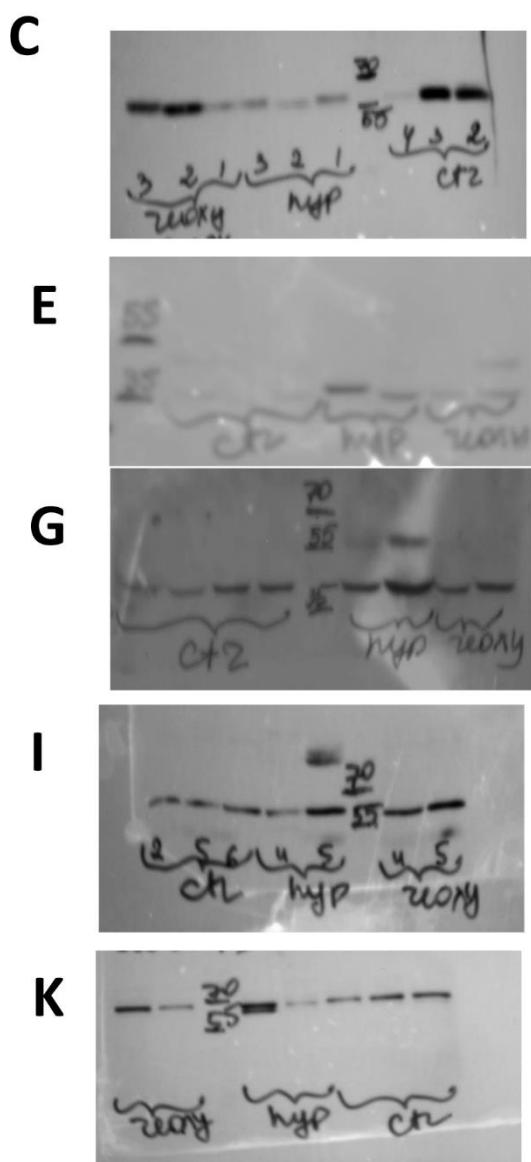


Scallops



Clams

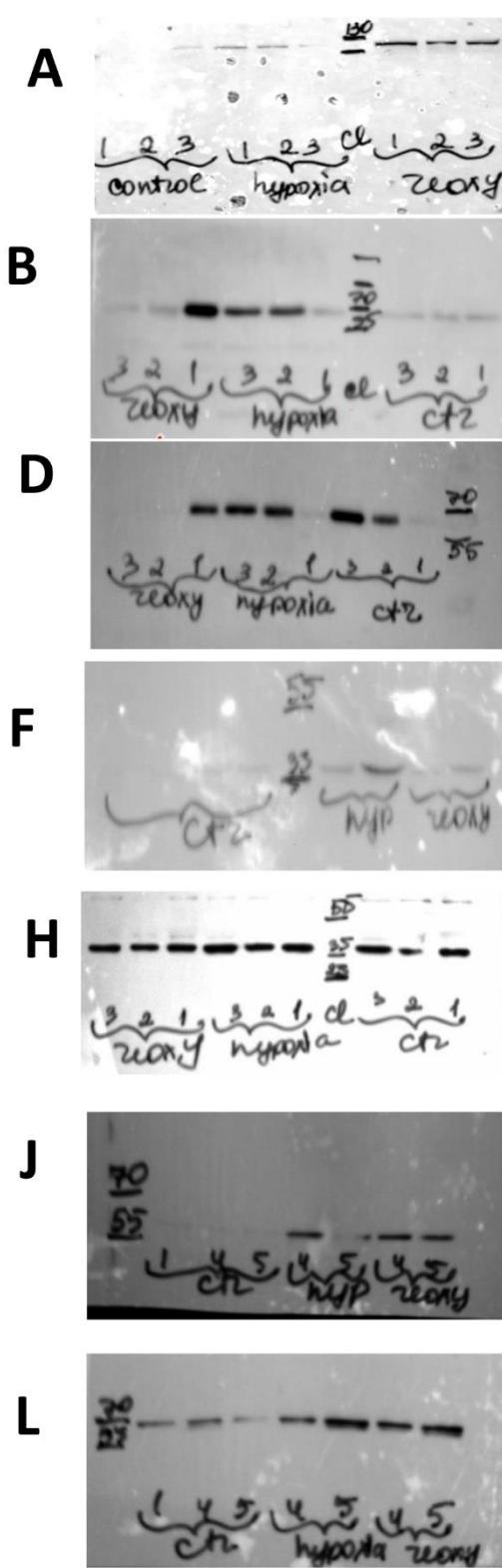


Figure S1

Representative Western blots for target genes from adductor muscle tissues of scallops and clams. A - HIF-1 α ; B - AMPK α ; C,D - phosphorylated AMPK α ; E, F – eukaryotic translation initiation factor EIF2 α ; G,H - phosphorylated eukaryotic translation initiation factor EIF2 α ; I, J - HSP60; K,L - HSP70 (showing bands for the constitutive HSP72-78 in all samples and an additional band for inducible HSP69 in lane # 4 of K, hypoxia-exposed scallops). C, E, G, I, K – scallops, A, B, D, F, H, J, L – clams.

Supplementary Table S1. Kinetics of mitochondrial substrate oxidation (SOX), proton leak (LEAK) and phosphorylation (PHOS) subsystems.

Average $\Delta\psi$ (mV; light grey) and respiration (MO₂, nmol O min⁻¹ mg⁻¹; dark grey) as well as the standard errors (SEM) and N for the respective parameters are given for each titration step. Smaller N in the later steps of the titrations are due to the fact that mitochondria in some isolations were depolarized faster than in others.

| Spec. | Cond. | SOX | | | | | LEAK | | | | | PHOS | | | | |
|-------|---------|--------------|------|-----------------|------|---|--------------|-------|-----------------|------|---|--------------|-------|-----------------|------|---|
| | | $\Delta\psi$ | SEM | MO ₂ | SEM | N | $\Delta\psi$ | SEM | MO ₂ | SEM | N | $\Delta\psi$ | SEM | MO ₂ | SEM | N |
| clam | control | 107.19 | 4.15 | 1.20 | 0.32 | 6 | 112.35 | 2.90 | 2.37 | 0.27 | 7 | 82.22 | 7.55 | 2.62 | 0.36 | 5 |
| clam | control | 107.70 | 3.52 | 1.92 | 0.31 | 6 | 107.66 | 4.25 | 2.04 | 0.25 | 7 | 78.03 | 8.29 | 1.61 | 0.15 | 5 |
| clam | control | 105.67 | 3.48 | 2.46 | 0.48 | 6 | 102.73 | 4.23 | 1.76 | 0.20 | 7 | 67.81 | 11.71 | 1.45 | 0.17 | 5 |
| clam | control | 102.07 | 3.66 | 2.45 | 0.36 | 6 | 94.51 | 4.47 | 1.56 | 0.18 | 7 | 66.77 | 15.00 | 1.32 | 0.15 | 4 |
| clam | control | 100.04 | 3.77 | 2.73 | 0.44 | 6 | 86.91 | 5.47 | 1.48 | 0.17 | 7 | 58.23 | 17.10 | 1.09 | 0.22 | 4 |
| clam | control | 95.36 | 4.73 | 2.75 | 0.46 | 6 | 79.21 | 7.25 | 1.42 | 0.23 | 7 | 67.67 | 18.63 | 1.03 | 0.28 | 3 |
| clam | control | 91.37 | 4.96 | 2.78 | 0.49 | 6 | 72.07 | 9.80 | 1.19 | 0.24 | 7 | 63.48 | 18.51 | 0.59 | 0.20 | 3 |
| clam | control | 84.83 | 5.98 | 2.70 | 0.49 | 6 | 64.41 | 12.39 | 1.19 | 0.25 | 6 | 54.80 | 22.99 | 0.24 | 0.44 | 3 |
| clam | control | 77.32 | 7.20 | 2.61 | 0.42 | 6 | 60.97 | 12.03 | 0.92 | 0.27 | 5 | 45.52 | 26.24 | 0.12 | 0.36 | 3 |
| clam | control | 70.58 | 8.23 | 2.30 | 0.53 | 6 | 73.38 | 9.58 | 0.90 | 0.44 | 3 | | | | | |
| clam | hypoxia | 122.92 | 3.75 | 1.15 | 0.26 | 7 | 112.85 | 7.87 | 1.96 | 0.31 | 6 | 98.95 | 8.54 | 2.18 | 0.19 | 5 |
| clam | hypoxia | 122.72 | 3.74 | 1.38 | 0.28 | 7 | 109.66 | 7.68 | 1.61 | 0.22 | 6 | 96.66 | 8.80 | 1.39 | 0.14 | 5 |
| clam | hypoxia | 120.44 | 3.53 | 2.12 | 0.33 | 7 | 107.64 | 7.34 | 1.23 | 0.23 | 6 | 95.04 | 8.27 | 1.33 | 0.15 | 5 |
| clam | hypoxia | 117.99 | 3.56 | 2.71 | 0.37 | 7 | 104.96 | 7.00 | 1.13 | 0.21 | 6 | 93.02 | 8.25 | 1.33 | 0.15 | 5 |
| clam | hypoxia | 114.92 | 3.65 | 3.14 | 0.40 | 7 | 101.33 | 6.86 | 1.05 | 0.20 | 6 | 87.78 | 9.50 | 1.18 | 0.17 | 5 |
| clam | hypoxia | 110.67 | 3.74 | 3.20 | 0.36 | 5 | 97.93 | 6.31 | 0.94 | 0.24 | 5 | 85.60 | 9.30 | 0.99 | 0.17 | 5 |
| clam | hypoxia | 105.21 | 3.81 | 3.35 | 0.32 | 5 | 93.29 | 7.10 | 0.91 | 0.28 | 4 | 81.90 | 9.99 | 0.75 | 0.25 | 5 |
| clam | hypoxia | 99.79 | 3.95 | 3.00 | 0.37 | 5 | 89.70 | 7.40 | 0.87 | 0.28 | 4 | 77.59 | 9.91 | 0.41 | 0.21 | 5 |
| clam | hypoxia | 93.39 | 3.97 | 2.73 | 0.26 | 5 | 84.73 | 7.94 | 0.85 | 0.39 | 3 | 67.67 | 13.52 | 0.16 | 0.24 | 5 |
| clam | hypoxia | 89.22 | 4.45 | 1.88 | 0.35 | 4 | 79.37 | 8.82 | 1.22 | 0.22 | 2 | 54.33 | 19.31 | 0.23 | 0.39 | 3 |
| clam | reoxy | 136.03 | 5.19 | 1.26 | 0.31 | 6 | 125.44 | 3.58 | 2.74 | 0.64 | 5 | 97.08 | 3.71 | 2.71 | 0.32 | 5 |
| clam | reoxy | 134.04 | 5.34 | 1.99 | 0.39 | 6 | 120.37 | 3.89 | 1.89 | 0.16 | 5 | 92.09 | 3.74 | 2.04 | 0.14 | 5 |
| clam | reoxy | 131.14 | 5.35 | 2.92 | 0.49 | 6 | 115.79 | 4.35 | 1.52 | 0.10 | 5 | 87.68 | 4.01 | 1.84 | 0.12 | 5 |
| clam | reoxy | 127.57 | 5.47 | 3.16 | 0.53 | 6 | 111.40 | 4.04 | 1.31 | 0.17 | 5 | 81.76 | 4.12 | 1.84 | 0.12 | 5 |
| clam | reoxy | 123.05 | 5.58 | 3.46 | 0.56 | 6 | 107.16 | 3.72 | 1.08 | 0.24 | 5 | 79.72 | 8.40 | 1.70 | 0.09 | 4 |
| clam | reoxy | 118.18 | 5.82 | 3.92 | 0.47 | 6 | 103.40 | 3.27 | 1.09 | 0.06 | 4 | 72.78 | 12.02 | 1.59 | 0.10 | 4 |
| clam | reoxy | 113.87 | 7.96 | 4.04 | 0.50 | 5 | 100.03 | 2.58 | 0.99 | 0.05 | 4 | 66.48 | 15.89 | 1.37 | 0.18 | 4 |
| clam | reoxy | 109.54 | 7.55 | 3.75 | 0.48 | 5 | 97.44 | 2.43 | 0.94 | 0.06 | 4 | 76.80 | 3.55 | 0.91 | 0.22 | 3 |
| clam | reoxy | 101.64 | 7.67 | 3.04 | 0.30 | 4 | | | | | | 73.82 | 4.00 | 0.82 | 0.19 | 3 |
| clam | reoxy | 97.68 | 3.79 | 3.94 | 0.28 | 2 | | | | | | 68.88 | 5.56 | 0.40 | 0.09 | 3 |

| | | | | | | | | | | | | | | | | |
|---------|---------|--------|-------|------|------|---|--------|-------|------|------|---|--------|-------|------|------|---|
| scallop | control | 132.05 | 3.08 | 1.81 | 0.35 | 7 | 130.59 | 2.62 | 3.24 | 0.41 | 7 | 120.73 | 3.53 | 3.79 | 0.29 | 6 |
| scallop | control | 130.27 | 3.33 | 2.21 | 0.30 | 7 | 105.32 | 4.92 | 2.42 | 0.31 | 7 | 84.63 | 7.89 | 2.67 | 0.46 | 6 |
| scallop | control | 128.30 | 3.25 | 2.65 | 0.38 | 7 | 89.68 | 5.65 | 1.98 | 0.31 | 7 | 64.07 | 11.91 | 2.45 | 0.05 | 5 |
| scallop | control | 124.86 | 3.85 | 2.85 | 0.36 | 7 | 75.59 | 6.40 | 1.65 | 0.23 | 7 | 51.32 | 10.69 | 2.15 | 0.13 | 5 |
| scallop | control | 119.56 | 4.22 | 3.49 | 0.46 | 7 | 68.57 | 6.16 | 1.51 | 0.25 | 7 | 46.20 | 9.70 | 1.97 | 0.15 | 4 |
| scallop | control | 113.89 | 4.84 | 3.59 | 0.40 | 7 | 60.05 | 9.56 | 1.29 | 0.26 | 6 | 39.94 | 3.77 | 1.47 | 0.23 | 3 |
| scallop | control | 106.14 | 6.13 | 3.69 | 0.47 | 7 | 63.14 | 5.79 | 1.15 | 0.27 | 5 | 41.98 | 5.49 | 0.89 | 0.03 | 2 |
| scallop | control | 99.25 | 6.97 | 3.15 | 0.38 | 7 | 59.86 | 6.80 | 1.04 | 0.27 | 5 | 19.28 | 0.34 | 0.72 | 0.04 | 2 |
| scallop | control | 88.17 | 12.63 | 3.18 | 0.63 | 6 | 56.66 | 5.36 | 0.89 | 0.27 | 5 | 19.28 | 0.34 | 0.52 | 0.13 | 2 |
| scallop | control | 85.08 | 12.98 | 2.92 | 0.67 | 5 | | | | | | | | | | |
| scallop | hypoxia | 129.19 | 5.32 | 1.86 | 0.54 | 5 | 129.43 | 1.99 | 2.73 | 0.44 | 5 | 123.02 | 1.96 | 2.36 | 0.45 | 5 |
| scallop | hypoxia | 125.47 | 5.99 | 2.20 | 0.50 | 5 | 116.30 | 4.93 | 1.99 | 0.38 | 5 | 94.02 | 10.89 | 1.59 | 0.16 | 5 |
| scallop | hypoxia | 120.86 | 6.81 | 2.61 | 0.47 | 5 | 99.42 | 8.46 | 1.58 | 0.28 | 5 | 85.73 | 7.78 | 1.30 | 0.15 | 4 |
| scallop | hypoxia | 112.09 | 10.31 | 2.60 | 0.60 | 5 | 83.26 | 12.78 | 1.25 | 0.21 | 5 | 77.06 | 2.34 | 1.13 | 0.08 | 3 |
| scallop | hypoxia | 100.50 | 16.15 | 3.04 | 0.52 | 5 | 83.62 | 10.03 | 1.07 | 0.24 | 4 | 60.75 | 5.39 | 0.93 | 0.17 | 3 |
| scallop | hypoxia | 108.95 | 3.73 | 2.84 | 0.51 | 4 | 84.11 | 4.45 | 1.00 | 0.38 | 3 | 46.54 | 6.90 | 0.88 | 0.19 | 3 |
| scallop | hypoxia | 100.93 | 4.08 | 3.12 | 0.35 | 4 | | | | | | 44.28 | 8.98 | 0.90 | 0.32 | 2 |
| scallop | hypoxia | 83.75 | 10.99 | 2.77 | 0.63 | 4 | | | | | | | | | | |
| scallop | hypoxia | 72.91 | 9.18 | 1.96 | 0.53 | 4 | | | | | | | | | | |
| scallop | hypoxia | 54.74 | 13.51 | 0.66 | 0.21 | 4 | | | | | | | | | | |
| scallop | reoxy | 92.39 | 11.18 | 0.70 | 0.13 | 5 | 108.24 | 7.43 | 1.34 | 0.29 | 5 | 98.03 | 9.22 | 1.70 | 0.21 | 6 |
| scallop | reoxy | 64.88 | 18.05 | 0.92 | 0.16 | 5 | 91.60 | 10.08 | 0.88 | 0.15 | 5 | 78.18 | 6.55 | 1.01 | 0.13 | 6 |
| scallop | reoxy | 62.66 | 20.99 | 1.06 | 0.27 | 4 | 79.16 | 9.00 | 0.80 | 0.15 | 5 | 58.80 | 5.74 | 0.82 | 0.15 | 6 |
| scallop | reoxy | 86.27 | 14.49 | 1.13 | 0.67 | 2 | 61.67 | 15.98 | 0.85 | 0.15 | 4 | 52.52 | 12.21 | 0.85 | 0.15 | 4 |
| scallop | reoxy | 52.76 | 33.84 | 1.42 | 0.44 | 2 | 66.02 | 13.61 | 0.73 | 0.23 | 3 | 49.03 | 16.09 | 0.70 | 0.18 | 3 |
| scallop | reoxy | 77.89 | | 1.97 | | 1 | 71.80 | 12.68 | 0.82 | 0.16 | 2 | | | | | |
| scallop | reoxy | 54.43 | | 1.85 | | 1 | 59.15 | 5.71 | 0.77 | 0.12 | 2 | | | | | |

Supplementary Table S2. Statistical comparisons of the kinetic curves for different mitochondrial subsystems between different H/R conditions in scallops and clams.

| Subsystem | Species | Contrast | P |
|---------------------------|----------|---------------------------|-----------|
| Substrate oxidation (SOX) | Scallops | Control vs Hypoxia | 0.008* |
| | | Control vs Reoxygenation | <0.0001** |
| | | Hypoxia vs. Reoxygenation | <0.0001** |
| | Clams | Control vs Hypoxia | <0.0001** |
| | | Control vs Reoxygenation | <0.0001** |
| | | Hypoxia vs. Reoxygenation | <0.0001** |
| Phosphorylation (PHOS) | Scallops | Control vs Hypoxia | <0.0001** |
| | | Control vs Reoxygenation | <0.0001** |
| | | Hypoxia vs. Reoxygenation | 0.8372 |
| | Clams | Control vs Hypoxia | 0.0001** |
| | | Control vs Reoxygenation | 0.0782 |
| | | Hypoxia vs. Reoxygenation | 0.0005** |
| Proton leak (LEAK) | Scallops | Control vs Hypoxia | <0.0001** |
| | | Control vs Reoxygenation | <0.0001** |
| | | Hypoxia vs. Reoxygenation | 0.0036* |
| | Clams | Control vs Hypoxia | <0.0001** |
| | | Control vs Reoxygenation | <0.0001** |
| | | Hypoxia vs. Reoxygenation | 0.0026* |