

**Supplementary Table 1.** The predicted phosphorylation sites on the Complex I subunits shared among the three studied species.

The Complex I subunit on which the site is found, the respective kinase and the amino acid sequence motive around the predicted phosphorylation site are shown. The predicted phosphorylated residues (S, T or Y) are underlined. The alignment of the respective proteins in MEGA format (<https://www.megasoftware.net/>) can be found on GitHub: [https://github.com/RNAdetective/supplements/blob/master/concatenated\\_mt-proteins-from-selectedBivalves.zip](https://github.com/RNAdetective/supplements/blob/master/concatenated_mt-proteins-from-selectedBivalves.zip)

|                     |                    |       |         | Kinase             |                    |                    |
|---------------------|--------------------|-------|---------|--------------------|--------------------|--------------------|
| Site number         | CKII               | DNAPK | p38MAPK | PKA                | PKC                | Unspecified        |
| Subunit ND1         |                    |       |         |                    |                    |                    |
| 1                   |                    |       |         |                    |                    |                    |
| <i>A. islandica</i> |                    |       |         |                    |                    | PNKA <u>S</u> FKGA |
| <i>G. gigas</i>     |                    |       |         |                    |                    | PDKT <u>S</u> VGGF |
| <i>M. edulis</i>    |                    |       |         |                    |                    | PSKV <u>S</u> YMG  |
| 2                   |                    |       |         |                    |                    |                    |
| <i>A. islandica</i> |                    |       |         |                    |                    | CDSR <u>Y</u> AFLG |
| <i>G. gigas</i>     |                    |       |         |                    |                    | STSK <u>Y</u> AGVG |
| <i>M. edulis</i>    |                    |       |         |                    |                    | SNSK <u>Y</u> SLLG |
| 3                   |                    |       |         |                    |                    |                    |
| <i>A. islandica</i> | VEGE <u>S</u> ELVA |       |         |                    |                    |                    |
| <i>G. gigas</i>     | VEAE <u>S</u> ELVS |       |         |                    |                    |                    |
| <i>M. edulis</i>    | VEGE <u>S</u> ELVS |       |         |                    |                    |                    |
| Subunit ND3         |                    |       |         |                    |                    |                    |
| 4                   |                    |       |         |                    |                    |                    |
| <i>A. islandica</i> |                    |       |         |                    |                    | YNEG <u>T</u> LDWV |
| <i>G. gigas</i>     |                    |       |         |                    |                    | IFEG <u>S</u> VKWT |
| <i>M. edulis</i>    |                    |       |         |                    |                    | YREG <u>S</u> LEWV |
| Subunit ND 4        |                    |       |         |                    |                    |                    |
| 5                   |                    |       |         |                    |                    |                    |
| <i>A. islandica</i> |                    |       |         | TVSA <u>S</u> LPLL |                    |                    |
| <i>G. gigas</i>     |                    |       |         | TVGA <u>S</u> FPLL |                    |                    |
| <i>M. edulis</i>    |                    |       |         | TVFG <u>S</u> LFFL |                    |                    |
| Subunit ND5         |                    |       |         |                    |                    |                    |
| 6                   |                    |       |         |                    |                    |                    |
| <i>A. islandica</i> |                    |       |         |                    |                    | MAAPT <u>P</u> VST |
| <i>G. gigas</i>     |                    |       |         |                    |                    | MMAPT <u>P</u> VSS |
| <i>M. edulis</i>    |                    |       |         |                    |                    | MAAPT <u>P</u> VSS |
| 7                   |                    |       |         |                    |                    |                    |
| <i>A. islandica</i> |                    |       |         |                    | PTPV <u>S</u> TLVH |                    |

|                     |  |                    |  |  |                    |  |
|---------------------|--|--------------------|--|--|--------------------|--|
| <i>G. gigas</i>     |  |                    |  |  | PTPV <u>S</u> SLVH |  |
| <i>M. edulis</i>    |  |                    |  |  | PTPV <u>S</u> SLVH |  |
| 8                   |  |                    |  |  |                    |  |
| <i>A. islandica</i> |  |                    |  |  | STLV <u>T</u> AGVY |  |
| <i>G. gigas</i>     |  |                    |  |  | STLV <u>T</u> AGVF |  |
| <i>M. edulis</i>    |  |                    |  |  | STLV <u>T</u> AGVY |  |
| 9                   |  |                    |  |  |                    |  |
| <i>A. islandica</i> |  |                    |  |  | VIAL <u>S</u> TLSQ |  |
| <i>G. gigas</i>     |  |                    |  |  | VIAL <u>S</u> TLSQ |  |
| <i>M. edulis</i>    |  |                    |  |  | VIAL <u>S</u> TLSQ |  |
| 10                  |  |                    |  |  |                    |  |
| <i>A. islandica</i> |  |                    |  |  | IALST <u>L</u> SQL |  |
| <i>G. gigas</i>     |  |                    |  |  | IALST <u>L</u> SQL |  |
| <i>M. edulis</i>    |  |                    |  |  | IALST <u>L</u> SQL |  |
| 11                  |  |                    |  |  |                    |  |
| <i>A. islandica</i> |  | LSTL <u>S</u> QLGV |  |  |                    |  |
| <i>G. gigas</i>     |  | LSTL <u>S</u> QLGL |  |  |                    |  |
| <i>M. edulis</i>    |  | LSTL <u>S</u> QLSL |  |  |                    |  |