

**Table S4 - Codon usage in *L. polyactis* mitochondrial protein-coding genes**

| Amino acid | Codon | Number | Amino acid        | Codon | Number |
|------------|-------|--------|-------------------|-------|--------|
| Phe        | TTT   | 105    | Tyr               | TAT   | 46     |
|            | TTC   | 132    |                   | TAC   | 62     |
| Leu        | TTA   | 58     | Cys               | TGT   | 9      |
|            | TTG   | 18     |                   | TGC   | 22     |
|            | CTT   | 127    | His               | CAT   | 28     |
|            | CTC   | 224    |                   | CAC   | 79     |
|            | CTA   | 183    |                   | CAA   | 89     |
| Ile        | CTG   | 65     | Asn               | CAG   | 9      |
|            | ATT   | 124    |                   | AAT   | 32     |
|            | ATC   | 145    | AAC               | 87    |        |
| Met        | ATA   | 96     | Lys               | AAA   | 61     |
|            | ATG   | 61     |                   | AAG   | 10     |
| Val        | GTT   | 58     | Asp               | GAT   | 22     |
|            | GTC   | 58     |                   | GAC   | 55     |
|            | GTA   | 52     | Glu               | GAA   | 74     |
|            | GTG   | 30     |                   | GAG   | 28     |
| Ser        | TCT   | 32     | Trp               | TGA   | 101    |
|            | TCC   | 65     |                   | TGG   | 20     |
|            | TCA   | 66     | Ser               | AGT   | 10     |
|            | TCG   | 9      |                   | AGC   | 42     |
| Pro        | CCT   | 48     | Gly               | GGT   | 29     |
|            | CCC   | 127    |                   | GGC   | 109    |
|            | CCA   | 43     |                   | GGA   | 70     |
|            | CCG   | 5      |                   | GGG   | 35     |
| Thr        | ACT   | 53     | Arg               | CGT   | 8      |
|            | ACC   | 141    |                   | CGC   | 18     |
|            | ACA   | 112    |                   | CGA   | 42     |
|            | ACG   | 13     |                   | CGG   | 10     |
| Ala        | GCT   | 58     | Stop <sup>I</sup> | TAA   | 5      |
|            | GCC   | 180    |                   | TAG   | 1      |
|            | GCA   | 94     |                   | AGA   | 1      |
|            | GCG   | 12     |                   |       |        |