

Table S3. Anticodons (AC) of tRNAs and number of mismatches present in Amino-acyl (AA) stem, TΨC-stem, DHU-stem and Anticodon (AC) stem of mitochondrial tRNAs of *A. assamensis* with respect to the selected Bombycoids.

| tRNA | Stem | <i>A. assamensis</i> | <i>S. ricini</i> | <i>A. pernyi</i> | <i>A. yamamai</i> | <i>B. mandarina</i> | <i>B. mori</i> | <i>M. sexta</i> |
|----------------------------|----------|----------------------|------------------|------------------|-------------------|---------------------|----------------|-----------------|
| <i>tRNA^{Met}</i> | AC | CAT | CAT | CAT | CAT | CAT | CAT | CAT |
| | AA Stem | - | - | - | - | - | - | - |
| | TΨC Stem | - | - | - | - | - | - | - |
| | AC Stem | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 |
| | DHU Stem | - | - | - | - | - | - | - |
| <i>tRNA^{Ile}</i> | AC | GAT | GAT | GAT | GAT | GAT | GAT | GAT |
| | AA Stem | - | - | - | GU-1 | - | - | - |
| | TΨC Stem | - | - | - | - | - | - | - |
| | AC Stem | GU-1 | GU-1 | GU-1 | GU-1 | - | - | GU-1 |
| | DHU Stem | - | - | - | - | - | - | - |
| <i>tRNA^{Gln}</i> | AC | TTG | TTG | TTG | TTG | TTG | TTG | TTG |
| | AA Stem | - | - | - | - | - | - | - |
| | TΨC Stem | - | - | - | - | - | - | - |
| | AC Stem | - | - | - | - | - | - | - |
| | DHU Stem | GU-1 | GU-1 | GU-1 | GU-1 | - | GU-1 | GU-1 |
| <i>tRNA^{Trp}</i> | AC | TCA | TCA | TCA | TCA | TCA | TCA | TCA |
| | AA Stem | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 |
| | TΨC Stem | - | - | - | - | - | - | - |
| | AC Stem | GU-1 | GU-1 | GU-1 | GU-1 | - | - | - |
| | DHU Stem | - | - | - | - | - | - | - |
| <i>tRNA^{Cys}</i> | AC | GCA | GCA | GCA | GCA | GCA | GCA | GCA |
| | AA Stem | GU-1 | GU-1 | GU-1 | GU-2 | GU-1 | GU-1 | GU-1 |
| | TΨC Stem | - | - | - | AA-1 | - | - | - |
| | AC Stem | - | - | - | - | - | - | - |
| | DHU Stem | GU-1 | GU-1 | GU-1 | - | - | - | - |
| <i>tRNA^{Tyr}</i> | AC | GTA | GTA | GTA | GTA | GTA | GTA | GTA |
| | AA Stem | - | - | - | - | - | - | - |
| | TΨC Stem | GU-3, GA-1 | AA-1 | AA-1 | AA-1 | - | - | - |
| | AC Stem | - | - | - | - | - | - | - |
| | DHU Stem | - | - | - | - | - | - | - |
| <i>tRNA^{Leu2}</i> | AC | TAA | TAA | TAA | TAA | TAA | TAA | TAA |
| | AA Stem | GU-1, UU-1 | UU-1 | UU-1 | UU-1 | UU-1 | UU-1 | UU-1 |
| | TΨC Stem | - | - | - | - | - | - | - |
| | AC Stem | - | - | - | - | - | - | - |
| | DHU Stem | GU-1 | GU-1 | GU-1 | GU-1 | - | GU-1 | GU-1 |
| <i>tRNA^{Lys}</i> | AC | CTT | CTT | CTT | CTT | CTT | CTT | CTT |
| | AA Stem | - | - | - | - | - | - | - |
| | TΨC Stem | - | - | - | - | - | - | - |
| | AC Stem | - | - | - | - | - | - | - |
| | DHU Stem | - | - | - | - | - | - | - |
| <i>tRNA^{Asp}</i> | AC | GTC | GTC | GTC | GTC | GTC | GTC | GTC |
| | AA Stem | - | - | - | - | - | - | - |
| | TΨC Stem | - | - | - | - | - | - | - |
| | AC Stem | - | - | - | - | - | - | GU-1 |
| | DHU Stem | - | - | - | - | - | - | - |

| | | | | | | | | |
|----------------------------|----------|------------|------------|------------|------------|------------|------------|------------|
| <i>tRNA^{Gly}</i> | AC | TCC | TCC | TCC | TCC | TCC | TCC | TCC |
| | AA Stem | - | - | - | - | - | - | - |
| | TΨC Stem | - | - | - | - | - | - | - |
| | AC Stem | - | - | - | - | - | - | - |
| | DHU Stem | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 |
| <i>tRNA^{Ala}</i> | AC | TGC | TGC | TGC | TGC | TGC | TGC | TGC |
| | AA Stem | GU-1, UU-1 | GU-1, UU-1 | GU-1, UU-1 | GU-1, UU-1 | GU-1 | GU-1 | GU-1, UU-1 |
| | TΨC Stem | - | - | - | - | - | - | - |
| | AC Stem | - | - | - | - | - | - | - |
| | DHU Stem | - | - | - | - | - | - | - |
| <i>tRNA^{Arg}</i> | AC | TCG | TCG | TCG | TCG | TCG | TCG | TCG |
| | AA Stem | - | - | - | - | - | UU-1 | UU-1 |
| | TΨC Stem | - | - | - | - | - | UU-1 | UU-1 |
| | AC Stem | - | - | - | - | - | - | - |
| | DHU Stem | - | - | - | - | - | - | - |
| <i>tRNA^{Asn}</i> | AC | GTT | GTT | GTT | GTT | GTT | GTT | GTT |
| | AA Stem | GU-1 | - | - | - | - | - | - |
| | TΨC Stem | - | AA-1 | AA-1 | AA-1 | - | - | - |
| | AC Stem | - | - | - | - | - | - | - |
| | DHU Stem | - | - | - | - | - | - | - |
| <i>tRNA^{Ser1}</i> | AC | GCT | GCT | GCT | GCT | GCT | GCT | GCT |
| | AA Stem | - | - | - | - | - | - | - |
| | TΨC Stem | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 |
| | AC Stem | - | - | - | - | - | - | - |
| | DHU Stem | UU-1 | UU-1 | UU-1 | UU-1 | - | - | AA-1 |
| <i>tRNA^{Glu}</i> | AC | TTC | TTC | TTC | TTC | TTC | TTC | TTC |
| | AA Stem | UU-1 | - | - | GU-1 | - | - | - |
| | TΨC Stem | - | - | - | - | - | - | - |
| | AC Stem | - | - | - | - | - | - | - |
| | DHU Stem | - | - | - | - | - | - | - |
| <i>tRNA^{Phe}</i> | AC | GAA | GAA | GAA | GAA | GAA | GAA | GAA |
| | AA Stem | - | - | - | - | - | - | - |
| | TΨC Stem | - | - | - | GU-1 | GU-1, UU-1 | GU-1, UU-1 | - |
| | AC Stem | - | - | - | - | - | - | - |
| | DHU Stem | GU-1 | GU-1 | GU-1 | GU-1 | GU-2 | GU-2 | GU-2 |
| <i>tRNA^{His}</i> | AC | GTG | GTG | GTG | GTG | GTG | GTG | GTG |
| | AA Stem | GU-1 | - | - | - | - | - | - |
| | TΨC Stem | - | GU-1 | GU-1 | - | GU-1 | GU-1 | - |
| | AC Stem | GU-1 | GU-1 | GU-1 | - | GU-1 | GU-1 | UU-1 |
| | DHU Stem | - | - | - | - | GU-1 | GU-1 | - |
| <i>tRNA^{Thr}</i> | AC | TGT | TGT | TGT | TGT | TGT | TGT | TGT |
| | AA Stem | - | GU-1, UU-1 | - | - | - | - | - |
| | TΨC Stem | - | - | - | - | UU-1 | UU-1 | - |
| | AC Stem | GU-1 | - | GU-1 | GU-1 | - | GU-1 | GU-1 |
| | DHU Stem | - | - | - | - | - | - | - |
| <i>tRNA^{Pro}</i> | AC | TGG | TGG | TGG | TGG | TGG | TGG | TGG |
| | AA Stem | - | - | - | - | - | - | - |
| | TΨC Stem | GU-1 | GU-1 | GU-1 | - | - | - | - |
| | AC Stem | - | - | - | - | - | - | - |
| | DHU Stem | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 |

| | | | | | | | | |
|----------------------------|-------------------------|-------------|-------------|-------------|-------------|-------------|-----------------------|-------------|
| <i>tRNA^{Ser2}</i> | AC | TGA | TGA | TGA | TGA | TGA | TGA | TGA |
| | AA Stem | - | - | - | - | - | - | - |
| | TΨC Stem | - | - | - | - | - | - | - |
| | AC Stem | UU-2 | UU-2 | UU-2 | UU-2 | UU-2 | GU-1, UU-2 | UU-1 |
| | DHU Stem | - | - | - | - | - | - | - |
| <i>tRNA^{Leu1}</i> | AC | TAG | TAG | TAG | TAG | TAG | TAG | TAG |
| | AA Stem | GU-2 | GU-2 | GU-2 | GU-1 | GU-1 | GU-1 | UU-1 |
| | TΨC Stem | - | GU-1 | - | - | - | - | - |
| | AC Stem | GU-2 | GU-1 | GU-2 | GU-2 | GU-2 | GU-2 | GU-1 |
| | DHU Stem | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 |
| <i>tRNA^{Val}</i> | AC | TAC | TAC | TAC | TAC | TAC | TAC | TAC |
| | AA Stem | - | GU-1 | - | - | - | - | - |
| | TΨC Stem | - | - | - | - | - | - | - |
| | AC Stem | - | - | - | - | - | - | - |
| | DHU Stem | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 | GU-1 |
| | GU Mismatches | 28 | 24 | 23 | 22 | 18 | 22 | 17 |
| | UU Mismatches | 6 | 6 | 5 | 5 | 5 | 7 | 7 |
| | GA Mismatches | 1 | 2 | 2 | 3 | 0 | 0 | 0 |
| | AA Mismatches | 0 | 0 | | 0 | 0 | 0 | 1 |
| | Total Mismatches | 35 | 32 | 30 | 30 | 23 | 29 | 25 |