

Electronic Supplementary Materials

Supplementary Figure 1. Panel A. Diagram of *Brugia malayi* asparaginyl-tRNA

synthetase proteins used to map the region involved in interleukin-8 receptor-mediated chemotaxis. The terms *Active* and *Inactive* refer to the ability of these purified

recombinant proteins to chemoattract human neutrophils which constitutively express

IL-8 receptors. **Panel B.** NMR solution structure of the *B. malayi* N terminal 111

residues (grey area in Panel A) known to be involved in tRNA binding and represents

the eukaryote specific extension domain. The C terminal 30 residues of this segment

are disordered except for a small centrally located alpha helix. **Panel C.** Same structure

as in Panel B, but lower magnification and oriented to show the long unstructured tether

that comprises the C terminal 33 residues and which connects the N terminal 80 residue

structured region to the catalytic domain of AsnRS. Images in panels B and C are those

deposited with PDB entry 2kqr [7].

Supplementary Figure 2. Secondary structure predictions (Predict Protein

<http://www.predictprotein.org> [20]) for the amino terminal tRNA extension domains of

two known chemoattractant eukaryotic class II tRNA synthetases compared to the

known structure of *B. malayi* AsnRS. The lines marked *SUB_sec* indicate the three-

state (H=helix, L=loop, or E=extended/beta-strand-like) secondary structural prediction

for residues about which PredictProtein is most confident (~80% predictive accuracy).

Residues with less accurate predictions are indicated by a dot. The most likely

prediction for each of these positions is included (with confidence level from 0=least to

25 1=most; see *Rel_sec*) on the line marked *PROF_sec*, where loop prediction is now
26 indicated by a blank. Accession numbers for these enzymes are human asparaginyl-
27 tRNA synthetase (UniProt O43776), human histidyl-tRNA synthetase (GenBank
28 P12081) and *B. malayi* asparaginyl-tRNA synthetase (GenBank P10723).

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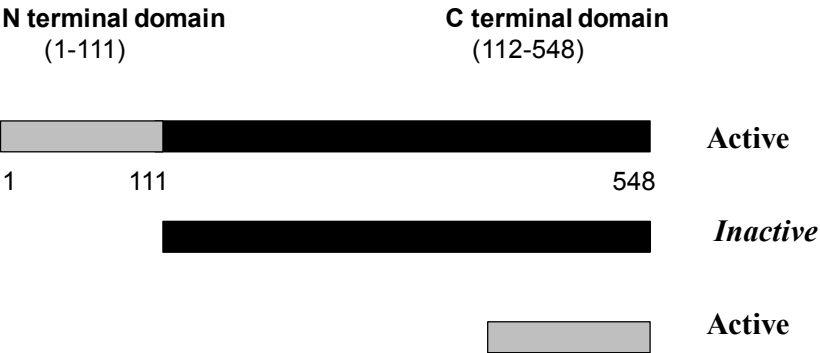
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A

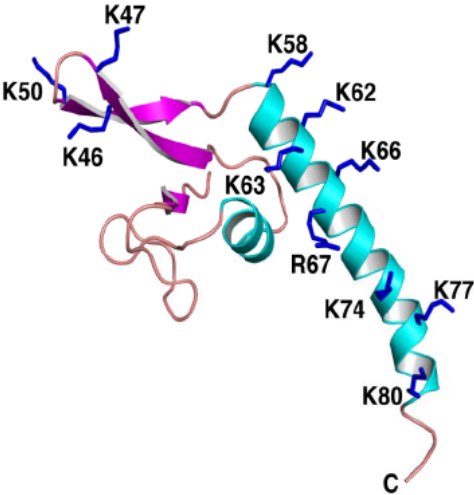


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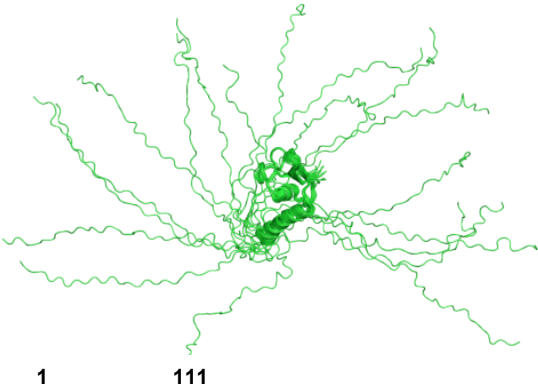
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C



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