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**S2 Fig** Predicted prepropeptide structures of insulin-like, IGF-like and DILP7-like peptides in *G. cornutus*.

Domain-based alignment of (A) insulin-like peptides, (B) IGF-like peptides, and (C) DILP7-like peptides from broad-horned flour beetle (*G. cornutus*), red flour beetle (*T. castaneum*), fruit fly (*D. melanogaster*), yellow fever mosquito (*A. aegypti*), and honey bee (*A. mellifera*). Representative ILPs of *D. melanogaster* (DILP2, -6, -7), *A. aegypti* (AaegILP3, -5, -6), and *A. mellifera* (AmILP1, -2)were shown. Highly conserved amino acid residues between all ILPs are shown in red, and highly conserved amino acid residues between orthologous ILPs in *G. cornutus* and *T. castaneum* are shown in green. Color bars indicate the predicted domains in the precursor peptides: green, signal peptide; red, B-chain; yellow, C-peptide; blue, A-chain; gray, D-domain. Asterisks on the color bars below the alignment denote Cys residues, and paired triangles denote potential cleavage sites (dibasic amino acids). GcorILP1-4 showed orthologous relationship with TcILP1-4, whereas GcorILP5 has no clear ortholog in *T. castaneum*. A group of insulin-like peptides (A) shares the most common structural feature of the ILP family, and GcorILP1, -2, -5 are classified into this group. The common feature of this group is a conserved domain organization of their precursors, consisting of a signal peptide, with a B-chain, C-peptide, and A-chain. After cleavage of the signal peptide, the C-peptide is most likely removed to generate a mature heterodimeric peptide consisting of the A- and B-chains like vertebrate insulin. A group of IGF-like peptides (B) is characterized by a relatively shortened or truncated C-peptide like vertebrate IGFs, and GcorILP3 is classified into this group. GcorILP3 has an extended A peptide (D-domain) as seen in TcILP3 and AaegILP6 [30], which are more like the vertebrate IGFs. The third group, DILP7-like peptides (C), is characterized by an unusually conserved sequence shared by several insects, and GcorILP4 is classified into this group. AaegILP, *A. aegypti* ILP; AmILP, *A. mellifera* ILP; DILP, *Drosophila* ILP; GcorILP, *G. cornutus* ILP; IGF, insulin-like growth factor; ILP, insulin-like peptide; TcILP, *T. castaneum* ILP.