

SUPPLEMENTARY INFORMATION

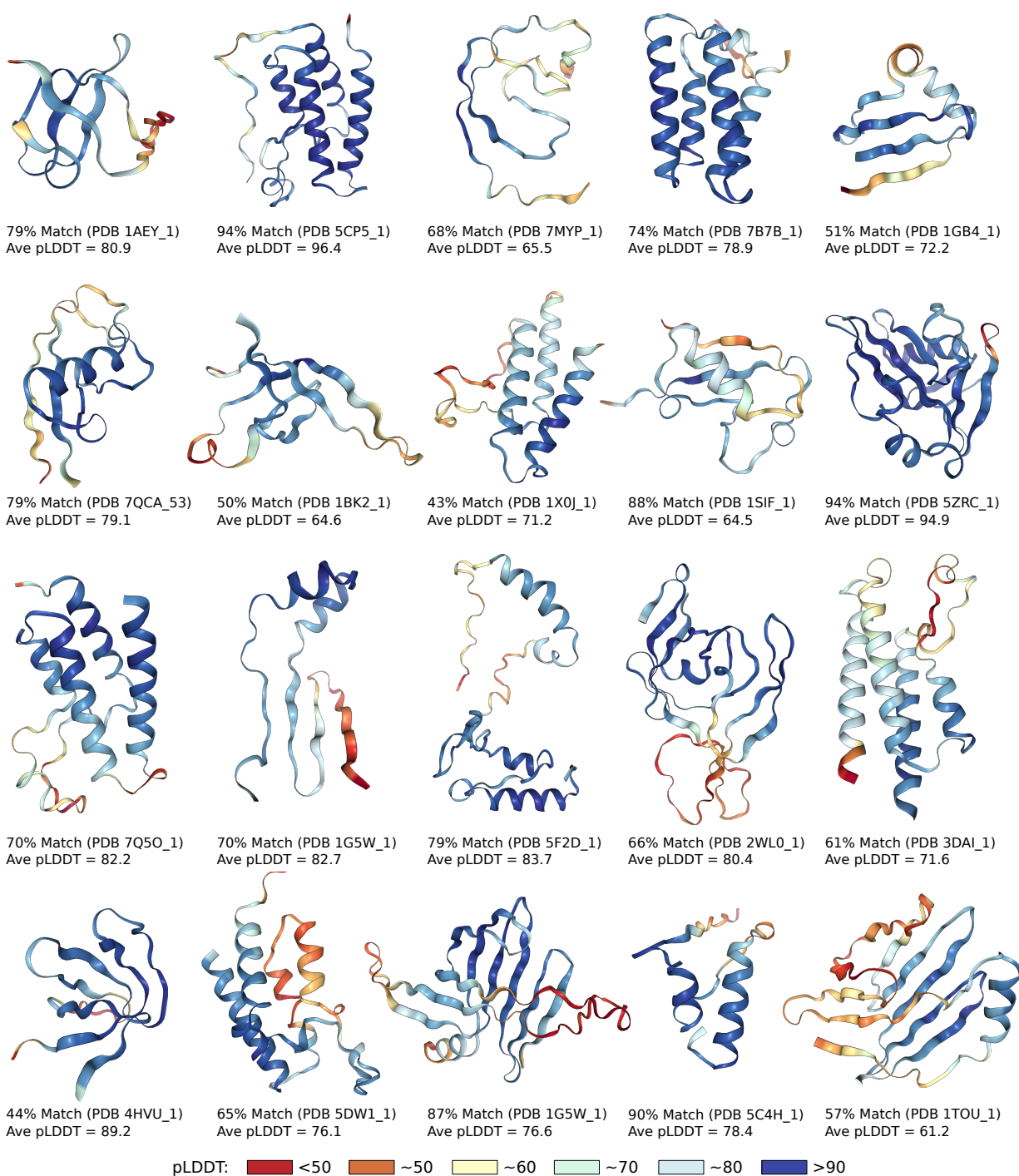


FIG. S1. Examples of proteins generated by the model visualized by AlphaFold and colored by pLDDT.

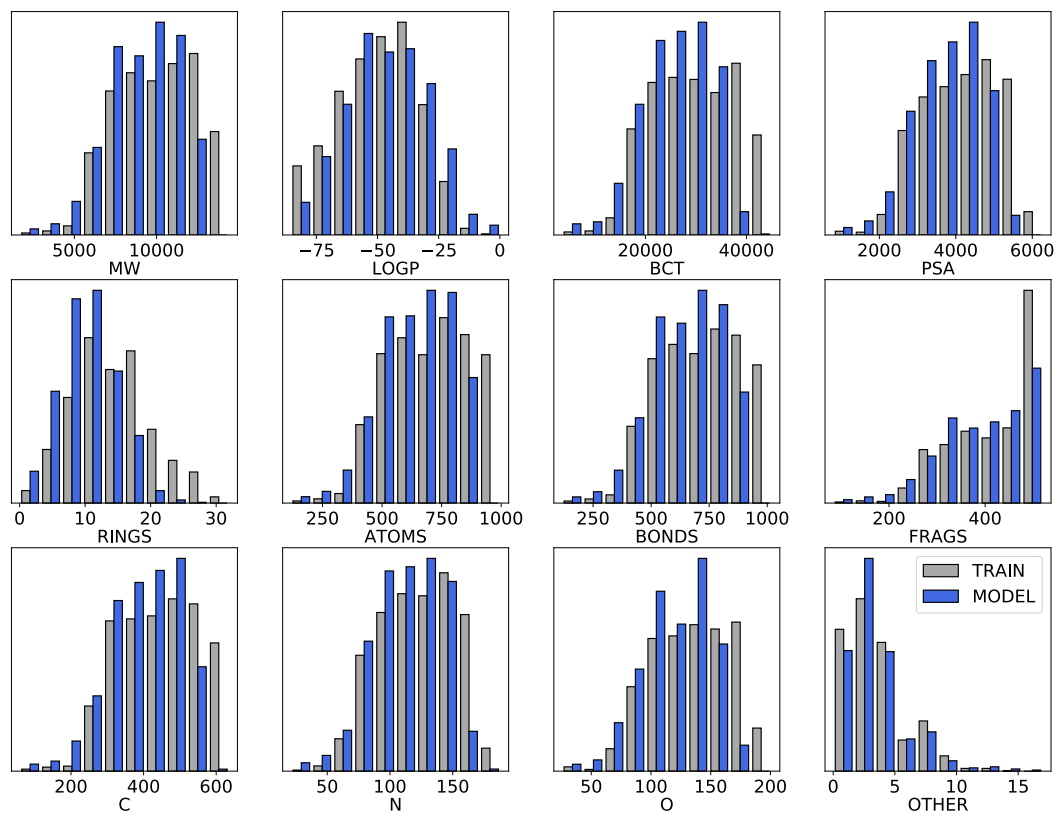


FIG. S2. Histograms of atom level properties for the basic proteins training data. These include exact molecular weight (MW), octanol-water partition coefficient (LogP) [11], molecular complexity (BCT), topological polar surface area (PSA), number of rings (RINGS), number of atoms (ATOMS), number of bonds (BONDS), number of fragments found by breaking up the molecule at rotatable bonds (FRAGS), number of carbons (C), number of nitrogens (N), number of oxygens (O), and number of any other atoms (OTHER).

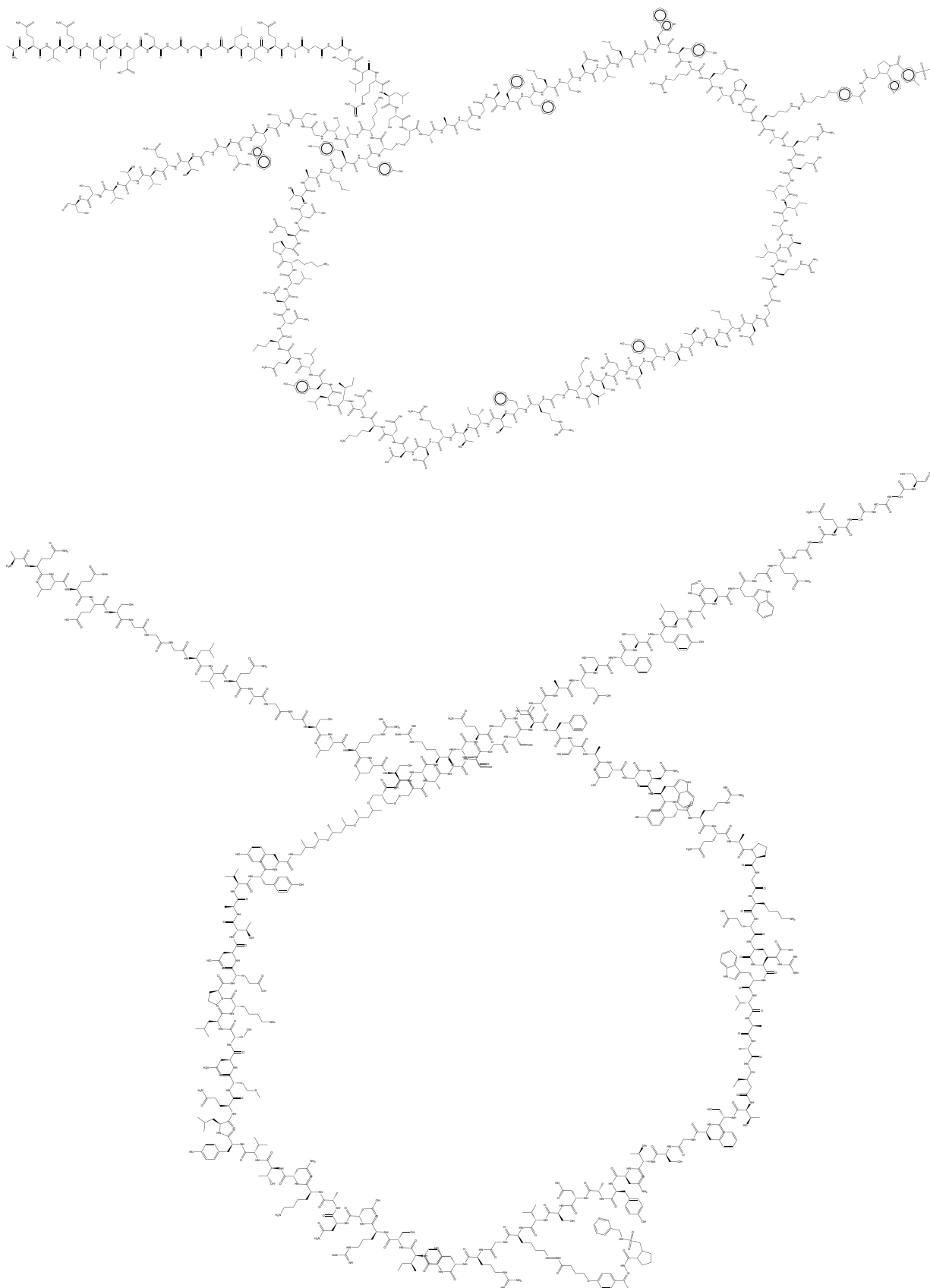


FIG. S3. **Antibody-Drug conjugates** Example antibody-drug conjugates from the training data (above) and one example produced by the language model (below) and plotted using ChemDraw as an atom-level graph.

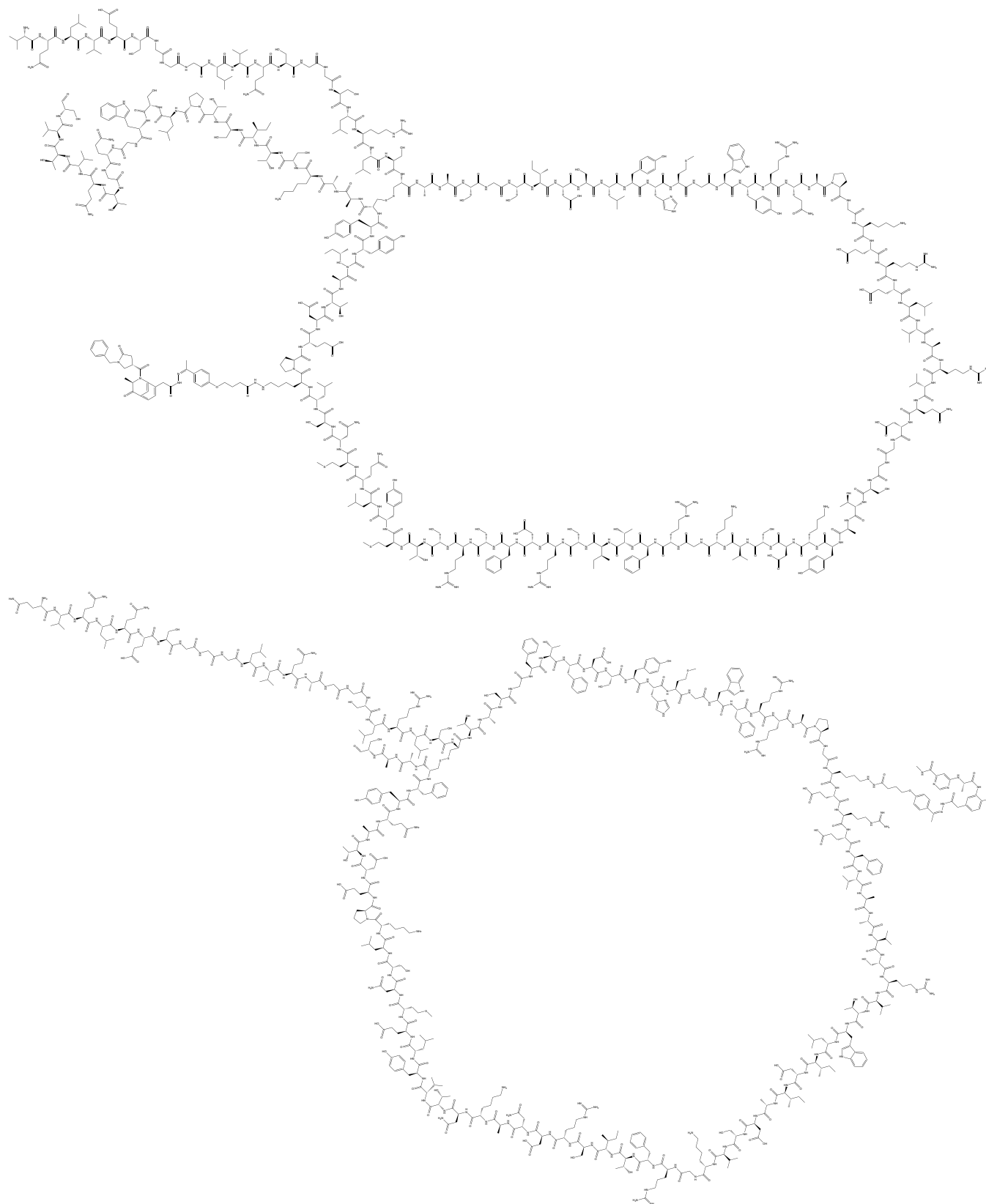


FIG. S4. **Model Antibody-drug conjugates** Example antibody-drug conjugates produced by the language model and plotted using ChemDraw as an atom-level graph.

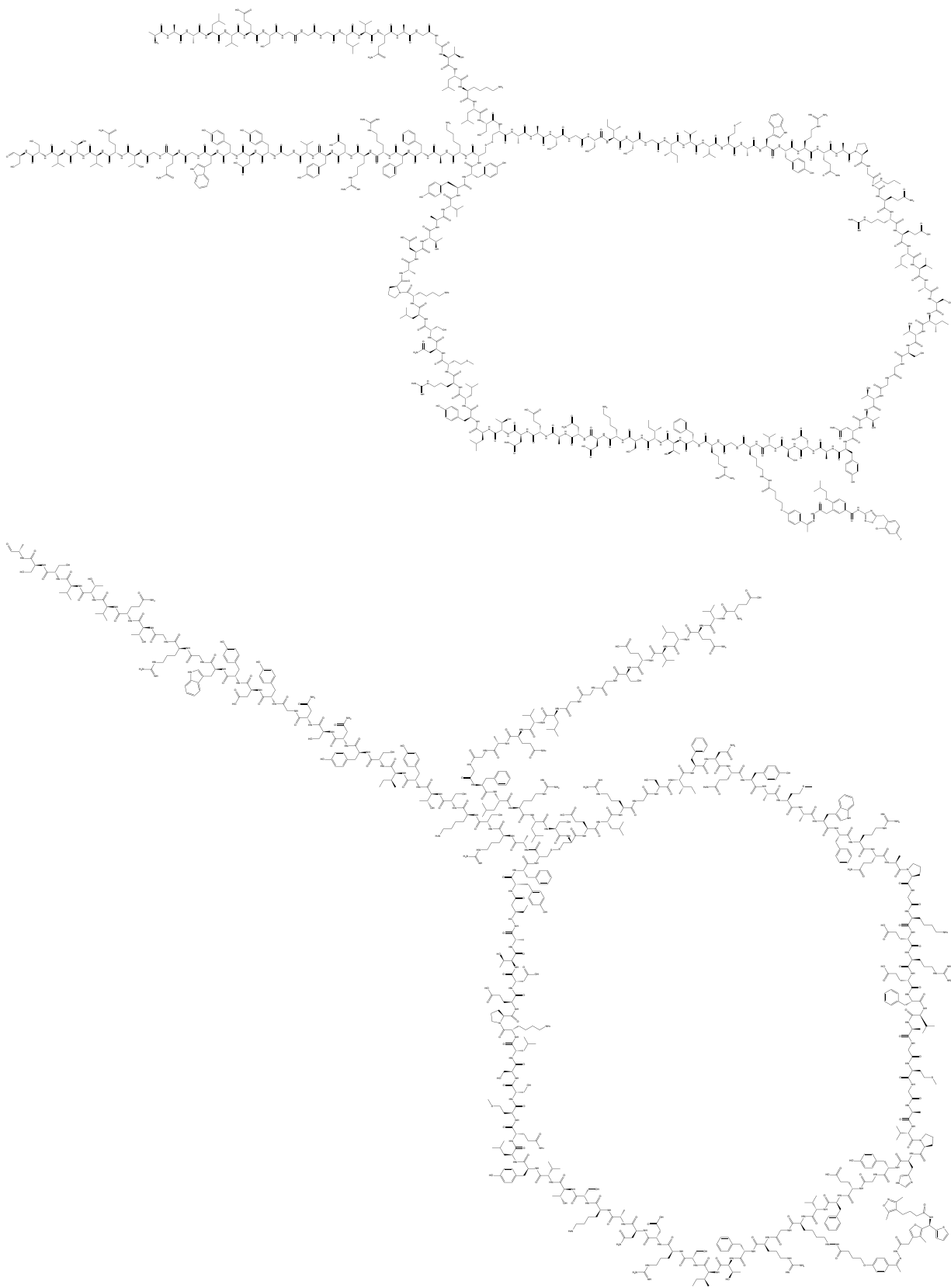


FIG. S5. **Model Antibody-drug conjugates** Example antibody-drug conjugates produced by the language model and plotted using ChemDraw as an atom-level graph.

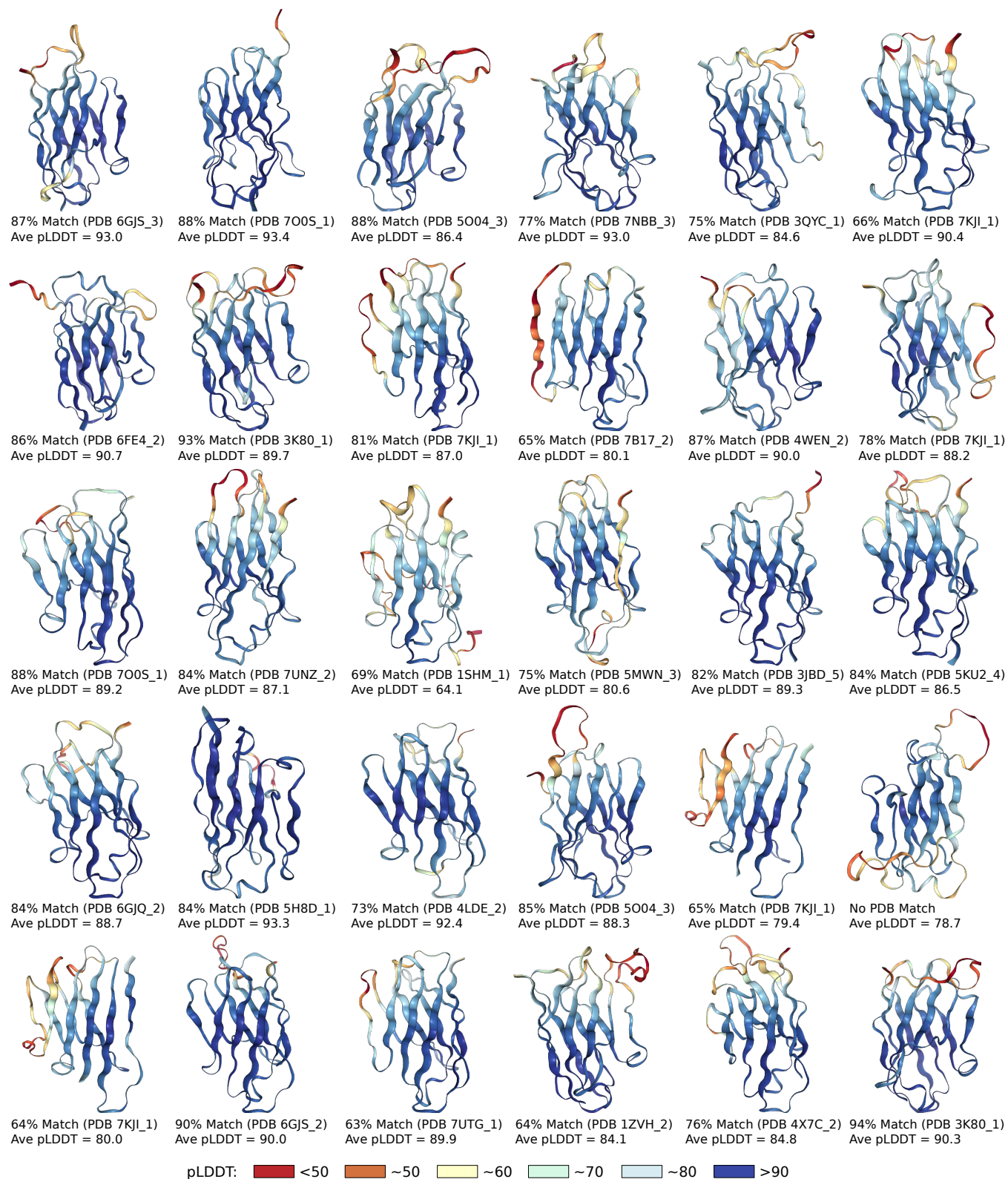


FIG. S6. Examples of single domain antibodies from samples of sdAb-drug conjugates (excluding warheads) generated by the model visualized by AlphaFold and colored by pLDDT.

FIG. S7. Examples of detached warheads from training single domain antibody-drug conjugates.

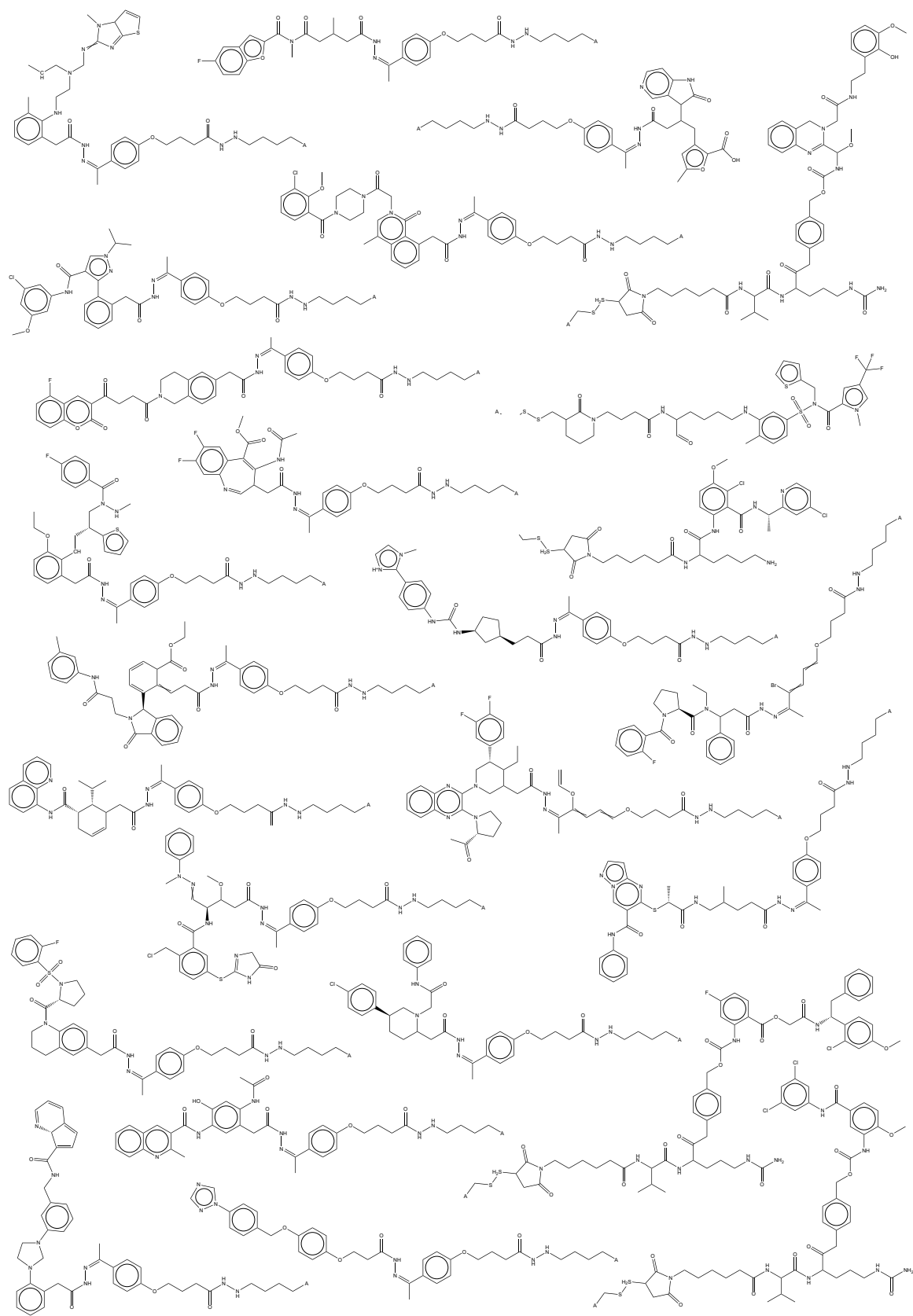


FIG. S8. Examples of detached warheads from model generated single domain antibody-drug conjugates.

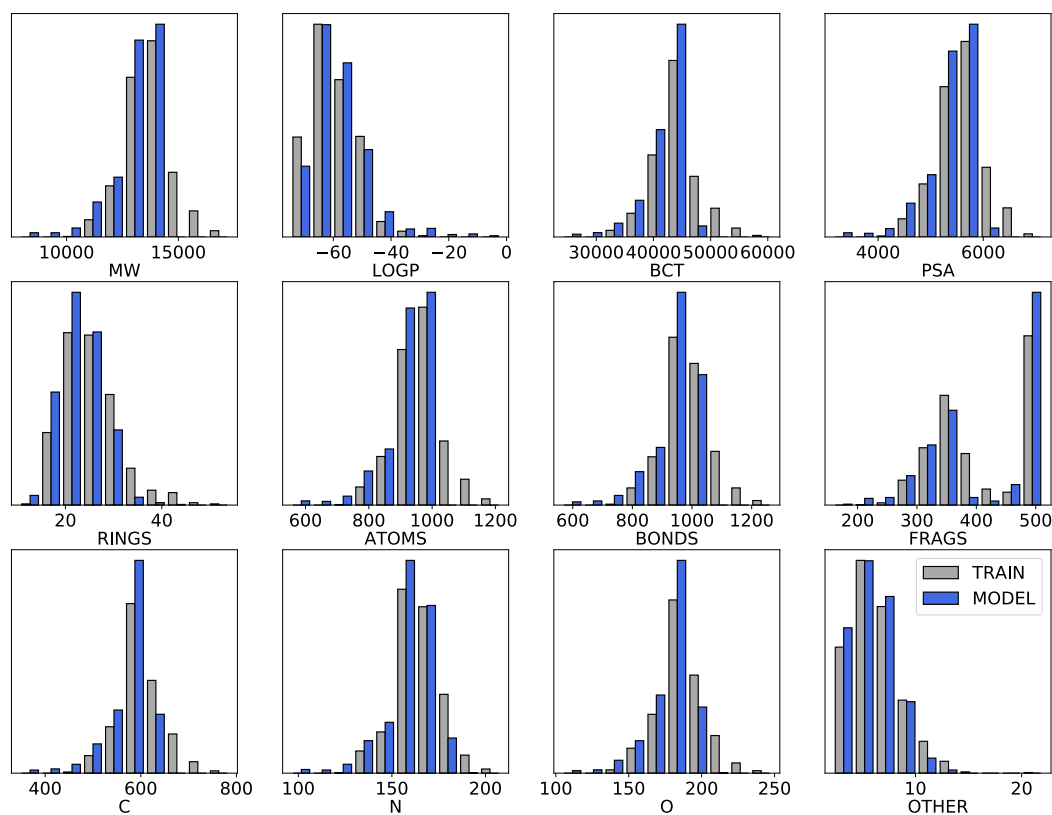


FIG. S9. Histograms of atom level properties for the antibody-drug-conjugates training data. These include exact molecular weight (MW), octanol-water partition coefficient (LogP) [11], molecular complexity (BCT), topological polar surface area (PSA), number of rings (RINGS), number of atoms (ATOMS), number of bonds (BONDS), number of fragments found by breaking up the molecule at rotatable bonds (FRAGS), number of carbons (C), number of nitrogens (N), number of oxygens (O), and number of any other atoms (OTHER)