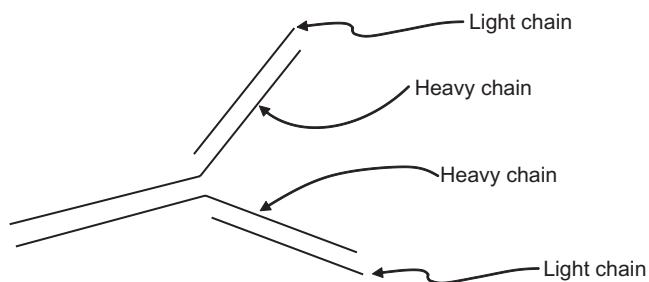


Antibodies take the form of four polypeptides, two light chains and two heavy chains, as indicated in the diagram below. The first light chain and first heavy chain are covalently attached to each other by disulfide bonds, to form a first complex. The second light chain and second heavy chain are covalently attached to each by disulfide bonds to form a second complex. The first complex and second complex are also covalently attached to each other by way of disulfide bonds.



As an example of an antibody drug, the amino acid sequence of the light chain and the amino acid sequence of the heavy chain of trastuzumab are shown below (43).

The amino acid sequence of the light chain of trastuzumab, as found at the cited accession numbers (44,45) is shown below. The light chain, shown below, has 214 amino acids.

```
DIQMTQSPSSLSASVGRVITICRASQDVNTAVAWYQQKPKAPKLLIYSASFLYSGVPSRFRSGRSRSGTDFT
LTISSLQPEDFATYYCQQHYTTPPTFGQGTKVEIKRTVAAPSFI FPPSDEQLKSGTASVVCLLNNFYPREAK
VQWKVDNALQSGNSQESVTEQDSKSDSTYLSLSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
```

The amino acid sequence of the heavy chain of this antibody, which has 451 amino acids and can be found at the cited accession number (46) is shown below.

```
EVQLVESGGGLVQPGGSLRLSCAASGFNIKDTYIHWVRQAPGKGLEWVARIYPTNGYTRYADSVKGRFTISA
DTSKNTAYLQMNSLRAEDTAVYYCSRWGGDGFYAMDYWGQGLVTVSSASTKGPSVFPLAPSSKSTSGGTAA
LGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGTQTYICNVNHKPSNTKVDK
KVEPPKSCDKTHTCPPCPAPELGGPSVFLFPPKPKDTLMI SRTPEVTCVVVDVSHEDPEVKFNWYVDGVEV
HNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRD
ELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTVDKSRWQQGNVFNCSVM
HEALHNHYTQKSLSLSPGK
```

⁴³ Fong S, Hu Z. Therapeutic anti-HER2 antibody fusion polypeptides. U.S. Pat Appl Publ. 2009/0226466. 2009;Sept. 10.

⁴⁴ Cho HS, Mason K, Ramyar KX, et al. GenBank Accession No. PDB:1N8Z_A (submitted November 21, 2002).

⁴⁵ <http://www.drugbank.ca/drugs/DB00072>

⁴⁶ Trastuzumab (DB00072) DrugBank Accession No. DB0072. Creation date June 13, 2005, updated June 2, 2009.