

|     | Human |  | Chimpanzee |  | Gorilla |  | Monkey |
|-----|-------|--|------------|--|---------|--|--------|
| 87  | Thr   |  | Thr        |  | Thr     |  | Gln    |
| 88  | Leu   |  | Leu        |  | Leu     |  | Leu    |
| 89  | Ser   |  | Ser        |  | Ser     |  | Ser    |
| 90  | Glu   |  | Glu        |  | Glu     |  | Glu    |
| 91  | Leu   |  | Leu        |  | Leu     |  | Leu    |
| 92  | His   |  | His        |  | His     |  | His    |
| 93  | Cys   |  | Cys        |  | Cys     |  | Cys    |
| 94  | Asp   |  | Asp        |  | Asp     |  | Asp    |
| 95  | Lys   |  | Lys        |  | Lys     |  | Lys    |
| 96  | Leu   |  | Leu        |  | Leu     |  | Leu    |
| 97  | His   |  | His        |  | His     |  | His    |
| 98  | Val   |  | Val        |  | Val     |  | Val    |
| 99  | Asp   |  | Asp        |  | Asp     |  | Asp    |
| 100 | Pro   |  | Pro        |  | Pro     |  | Pro    |
| 101 | Glu   |  | Glu        |  | Glu     |  | Glu    |
| 102 | Asn   |  | Asn        |  | Asn     |  | Asn    |
| 103 | Phe   |  | Phe        |  | Phe     |  | Phe    |
| 104 | Arg   |  | Arg        |  | Lys     |  | Lys    |
| 105 | Leu   |  | Leu        |  | Leu     |  | Leu    |
| 106 | Leu   |  | Leu        |  | Leu     |  | Leu    |
| 107 | Gly   |  | Gly        |  | Gly     |  | Gly    |
| 108 | Asn   |  | Asn        |  | Asn     |  | Asn    |
| 109 | Val   |  | Val        |  | Val     |  | Val    |
| 110 | Leu   |  | Leu        |  | Leu     |  | Leu    |
| 111 | Val   |  | Val        |  | Val     |  | Val    |
| 112 | Cys   |  | Cys        |  | Cys     |  | Cys    |
| 113 | Val   |  | Val        |  | Val     |  | Val    |
| 114 | Leu   |  | Leu        |  | Leu     |  | Leu    |
| 115 | Ala   |  | Ala        |  | Ala     |  | Ala    |
| 116 | His   |  | His        |  | His     |  | His    |

## Warm UP

Compare the hemoglobin amino acid sequences for the 4 species.

- 1) According to your analysis, which species is the most closely related to humans?
- 2) Which species is the least closely related to humans?