# Answer on Question#69134 – Chemistry – Organic chemistry

**Question:** The human body is said to contain approximately 50.0 grams of DNA in the entire body. If the number of nucleotides in ONE STRAND of DNA is approximately 3.0 x $10^6$, and the average molar mass of a nucleotide is 327 g/mol, what is the average molar mass of an entire DNA double helix?

**Solution:**

$$\mathrm{M(DNA)} = 2 \times 3.0 \times 10^6 \times 327 \frac{\mathrm{g}}{\mathrm{mol}} = 1.96 \times 10^9 \frac{\mathrm{g}}{\mathrm{mol}}$$

The DNA double helix consists of two strand, so we multiply by two.

**Answer:** $1.96 \times 10^9 \frac{\mathrm{g}}{\mathrm{mol}}$