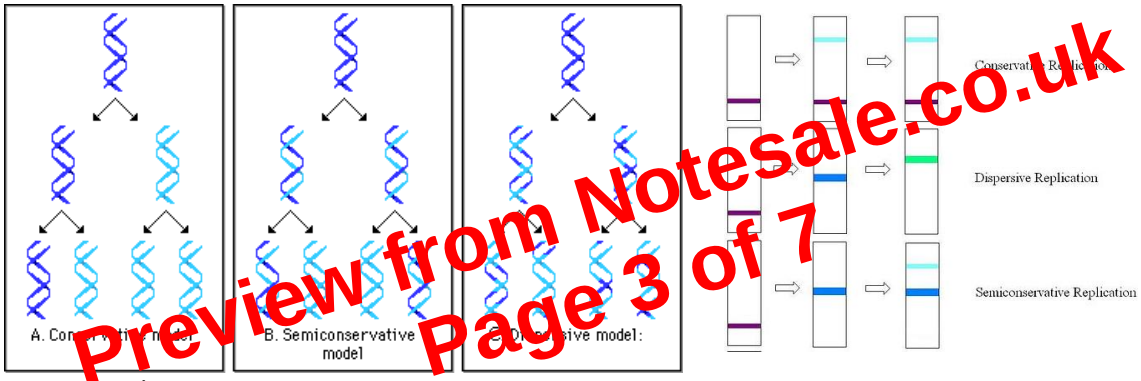
Meselsohn and Stahl used the bacterium E coli, a common and harmless bacteria. They cultured it with bases containing 15N (heavy nitrogen) for several generations. The cells were then broken open and centrifuged. All of the DNA was heavy and formed a band low down in the centrifuge tube.

The bacteria grown in heavy nitrogen were transferred to a medium containing 14N. samples of the bacteria were removed after 20 minutes (first generation) and again after 40 minutes (second generation). The cells from each generation were broken open and centrifuged.

After first generation, there was 100% intermediate. After second generation there were 50% light, 50% intermediate.

With dispersive replication, only a hybrid/ intermediate pattern would be visible. A hybrid banding pattern could not have been achieved with conservative replication.

The other theories of replication are conservative replication and dispersive replication.



Protein synthesis

All chemical reactions in a cell, and therefore all cell activities, are controlled by enzymes (proteins). DNA is a code for proteins and peptides and therefore controls which proteins are made so DNA controls the cell's activities. Protein molecules are made up of amino acids and the shape and behaviour of a protein molecule depends of the sequence of amino acids (primary structure). DNA controls protein structure by determining the order in which the amino acids joins together.

The triplet code

The sequence of bases or nucleotides in a DNA molecule is a code for the amino acid sequence in a polypeptide. The code is carried in the base sequence of only one of the two strands of DNA molecule- the coding strand as opposed to the non-coding strand. This is known as the degenerate code.

Three triplet codes are stop codes and mark the end of the reading of a code.

Code read downwards	Coding strand	Non Coding strand
	C A A	G T T
	T T A	A A T
	G A A	C T T