Synthesis of lipid Lipid synthesis describes the processes that convert nutrient-derived carbons into FAs.Both play a crucial role in directing protein synthesis.The ribosomes catalyze the formation of covalent peptide bonds between the encoded amino acids to form a polypeptide chain.[citation needed] Following translation the polypeptide chain must fold to form a functional protein; for example, to function as an enzyme the polypeptide chain must fold correctly to produce a functional active site.Acetyl-CoA is generated from citrate by the enzyme ATP-citrate lipase (ACLY) and then converted to malonyl-CoA by the enzyme acetyl-CoA carboxylase (ACC) (Fig.Acetyl-CoA and malonyl-CoA are then coupled to the acyl-carrier protein domain of the multifunctional enzyme fatty acid synthase (FASN).One of the main desaturases in mammalian cells is stearoyl-CoA desaturase (SCD), which introduces a double bond at the ?9 position of palmitic and stearic acid to generate monounsaturated FAs.Once correctly folded, the protein can undergo further maturation through different post-translational modifications, which can alter the protein's ability to function, its location within the cell (e.g. cytoplasm or nucleus) and its ability to interact with other proteins.Strings of nucleotides are bonded to form spiraling backbones and assembled into chains of bases or base-pairs selected from the five primary, or canonical, nucleobases.Palmitic acid Is further elongated and desaturases to generate the diverse spectrum of saturated and unsaturated FAs synthesized by mammalian cells.The generation of carbohydrate structures Involves linking glycosyl groups like monosaccharides or oligosaccharides through glycosidic bonds is called glycosylation.Therefore, It is Important to construct glycosidic linkages that have optimum molecular geometry (stereos electivity) and the stable bond (regioselectivity) at the reaction site (isomeric canter).Protein synthesis is a very similar process for both prokaryotes and eukaryotes but there are some distinct differ.Protein synthesis can be divided broadly into two phases: transcription and translation.Misfolded proteins have a tendency to form dense protein clumps, which are often implicated in diseases, particularly neurological disorders including Alzheimer's and Parkinson's disease.Carbohydrate synthesis aims to generate the polysaccharides with controlled structures through atomically economic methods.Protein synthesis Protein biosynthesis (or protein synthesis) is a core biological process, occurring inside cells, balancing the loss of cellular proteins (via degradation or export) through the production of new proteins.Repeated condensations of acetyl groups generate a basic 16-carbon saturated FA: palmitic acid.Carbohydrates synthesis Carbohydrate synthesis Is a sub-field of organic chemistry concerned with generating complex carbohydrate structures from simple units (monosaccharides) through natural or unnatural processes.In eukaryotes, this mRNA Is initially produced in a premature form (pre-mRNA) which undergoes post-transcriptional modifications to produce mature mRNA. 1).