

Transfer RNA (t-RNA or soluble RNA or s-RNA) →

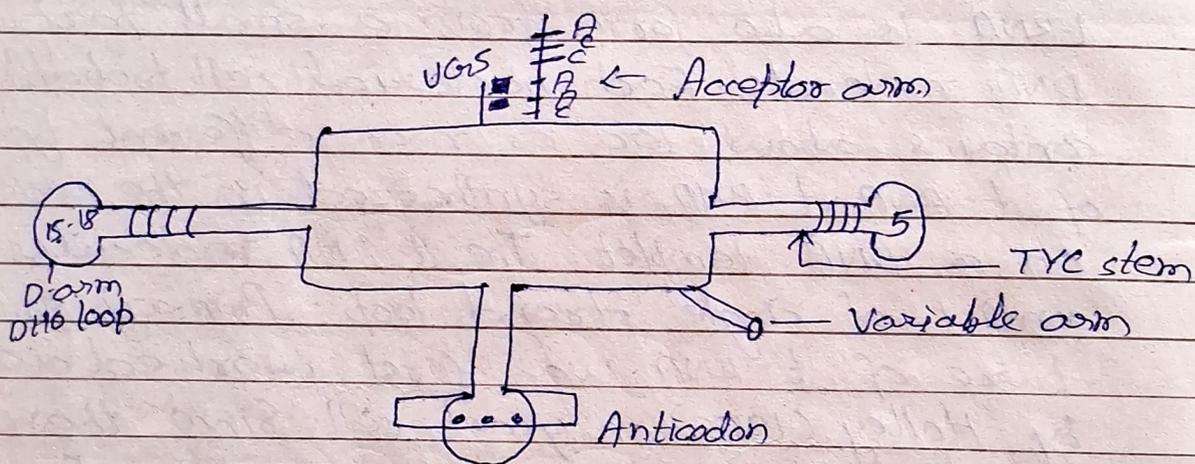
The transfer second most common RNA in the cell is transfer RNA. It is also called soluble RNA because it is too small to be precipitated. It consists about 10-20% of the total RNA of the cell. Transfer RNA is so small and having a molecular weight of about 25,000 to 30,000.

Transfer RNA is synthesized in the nucleus in a DNA template like r-RNA, t-RNA is also formed from a small part of DNA molecule. Each bacterial cell probably contains about 100 or more different types of t-RNA. t-RNA is synthesized in the nucleus on a DNA template. The t-RNA molecules consist of single strand loop. Primary structure of t-RNA was first worked out by Holley (1965) on yeast cell. Since then about 100 or more t-RNA ranging from bacteria to mammals has been established.

The single strand of t-RNA is of 3 feet and always terminate in a C-C-A sequence and the five feet end terminates in G or C. Many of the bases are bound to each other but there are also unpaired bases. In addition to the usual base AUG and C t-RNA contains a number of unusual bases and in this respect it differs from m-RNA and r-RNA. The unusual bases protects the t-RNA.

The transfer RNA is made up

of 75 - 100 nucleotides (Rich, 1976). One polynucleotide chain is folded upon itself to form 5 feet arms. As a result of the folding the 3'-0' feet and 5'-0' feet ends of the chain comes near each other but they form a loop like structure. But there is no base pairing in the loop and the other parts are called D-arm, DHU-arm, anticodon arm, variable arm, extra arm etc.



The function of t-RNA is to carry amino acid to m-RNA during protein synthesis. Each amino acid is carried by a specific t-RNA. If 20 amino acids are coded to form proteins, there must be at least 20 types of t-RNA. Thus there are many more t-RNA molecules than amino acids which probably coded by one gene.