RNA stabilizing modification used in crystallographic research
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Keywords: RNA crystallization, modification, thermodynamical stabilization

RNA molecules are involved in many important biological processes, especially in regulation of gene expression and pathogenesis of numerous diseases. In order to understand RNA function it is important to investigate its structure using such techniques as X-ray crystallography or NMR. However, these methods require homogeneous samples not only in terms of sequence but also structure[1]. To overcome these difficulties specific modifications can be incorporated into RNA, e.g. replacement of apical loop with the GNRA tetraloop or chemical modifications (ICL – interstrand crosslink or disulfide bonds)[2-5].

In these study we will present synthesis of aromatic linkers, introduction of linkers to the RNA sequence, biochemical and physicochemical validation and pre-eliminary results of crystallographic data.

Figure 1. Pathway of crystallographic studies of modified RNA oligonucleotides