Institut Européen de Chimie et Biologie

I E C B

CUSTOMIZING THE BIOPHYSICAL PROPERTIES OF RNA USING CHEMICAL MODIFICATION OF THE 2'-OH

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The seminar will describe an approach to rapidly and irreversibly modify with over twenty different chemical protective groups the 2'-OH position of long naturally occuring RNA molecules such as mRNA and rRNA. Changes in the biophysical properties of such modified RNA molecules include significant increases in RNase, divalent cation and hydrolysis stability, profound alterations in structure and hydrophobicity, the ability to serve as a substrate for RTases and fluorescent labelling. The standard protocol can be used to modify RNA in a crude cell lysate for sample preparation purposes. A method has been developed to equally regenerate the modified RNA to yield the original unmodified natural RNA. Part of the seminar will include a description of an apparently novel mechanism of RNA degradation triggered by guanidine. Finally there will be a brief description of the use of coated magnetic nanoparticles to differentially separate low molecular weight molecules from polymers.

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