

2019 Seminars

Chemical Regulation of Functional RNAs

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4-5:30PM

Chemistry 1640



We study the mechanisms of specificity and regulation of enzymes that act on RNA. We identified the molecular basis for how a small molecule, heme, affects microRNA processing enzyme Drosha. We show that heme acts as a signaling factor to switch on processing of a subset of microRNAs. Other chemicals such as S-adenosylmethionine, and transfer of its methyl group to RNA, can also have a big role in RNA-mediated gene regulation. We show the mechanistic details of how RNA methylation is accomplished, using crystal structures and biochemical studies.