Seminar

9:45 a.m. Thursday, January 12

331 Smith Hall

Postdoctoral Research Fellow

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Profiling Transcription Complexes via Small Molecules and Protein Observed ^{19}F NMR

Abstract

Transcription is a tightly regulated process orchestrated via a complex network of protein-protein interactions and signal cascades that culminate in the nucleus. A key transcription factor and histone acetyltransferase, CBP, possesses five protein-protein interaction domains including a KIX domain. Interactions with these domains serve central roles in normal physiology including haematopoiesis, proliferation, and neurological function. We have developed several chemical biology approaches for discovery of new chemical probes for the KIX domain of CBP and their applications for characterizing larger transcription complexes will be discussed. Of note, is the use of ^{19}F NMR spectroscopy for studying protein-ligand interactions and allosteric regulation of KIX through sequence selective incorporation of ^{19}F-lableled amino acids at protein-protein interaction hot spots. Implementation of this technique for studying natural activator-KIX interactions, high throughput fragment screening approaches and characterization of new small molecule ligand will be highlighted.

Hosts: Professors Christopher Cramer and Gianluigi Veglia
Refreshments will be served prior to the seminar.