

Ohio University

OHIO Open Library

All Forum Articles

College of Arts & Sciences Forum

9-1-2018

Chemistry Colloquium | 2Aryl5carboxytetrazoles A New Class of Photo CrossLinkers, Sept. 17

Ohio University College of Arts & Sciences

Follow this and additional works at: https://ohioopen.library.ohio.edu/cas_forum_all

Recommended Citation

Ohio University College of Arts & Sciences, "Chemistry Colloquium | 2Aryl5carboxytetrazoles A New Class of Photo CrossLinkers, Sept. 17" (2018). *All Forum Articles*. 5534.
https://ohioopen.library.ohio.edu/cas_forum_all/5534

This News Article is brought to you for free and open access by the College of Arts & Sciences Forum at OHIO Open Library. It has been accepted for inclusion in All Forum Articles by an authorized administrator of OHIO Open Library. For more information, please contact deborded@ohio.edu.

Chemistry Colloquium | 2-Aryl-5-carboxytetrazoles: A New Class of Photo-Cross-Linkers, Sept. 17

September 1, 2018

Categories: Events

Tags: Chemistry and biochemistry colloquia, chemistry and biochemistry events, Qing Lin



Dr. Qing Lin

Ohio University's [Chemistry & Biochemistry Colloquium Series](#) presents [Dr. Qing Lin](#) on "2-Aryl-5-carboxytetrazoles: A new class of photo-cross-linkers for medicinal chemistry and chemical biology" on Monday, Sept. 17, from 4:10 to 5 p.m. in Clippinger 194.

Lin is Professor of Chemistry at SUNY Buffalo.

Abstract: In this talk, I will describe our recent work on the development of 2-aryl-5-carboxytetrazoles (ACT) as a new class of photo-cross-linkers. During the studies of the tetrazole reactivity, we observed that the ACT undergoes the photoinduced ring rupture to generate a highly electrophilic carboxy-nitrile imine intermediate, which then reacts with a proximate nucleophile in biological systems. By harnessing this unique reactivity profile, we showed that ACT can serve as an effective photoaffinity label when it is attached to a drug molecule. In this mode, ACT allowed covalent capture of the drug targets with an efficiency equal to or greater than the commonly used photoaffinity labels such as benzophenone and diazirine. In addition, an ACT motif was introduced to the lysine side chain to create a class of unnatural amino acids, which together with an orthogonal aminoacyl-tRNA synthetase/tRNA pair can be incorporated into protein structures in a site-specific manner. One ACT amino acid, mPyTK, was introduced into an adaptor protein, Grb2, in mammalian cells. The resulting mPyTK-encoded Grb2 mutant allowed the capture of its transient interaction partner, EGFR, in a stimulus and time-dependent manner in live mammalian cells.

The host is [Dr. Justin Holub](#), Assistant Professor of Chemistry & Biochemistry at Ohio University.