Abstract

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Project Title: Fluroscence polarization assay for PLK1 inhibitors

Abstract: *DESCRIPTION* (provided by applicant): Polo-like kinase 1 (PLK1) is a serine-threonine protein kinase that functions as a key regulator of mitosis. Numerous studies indicate an involvement of PLK1 in human cancer. In addition, there is increasing evidence implicating PLK1 in neurogenerative diseases such as Alzheimer's (disease) and diseases of viral origin, including simian immunodeficiency virus (SIV) and human cytomegaloviral and papillomaviral infection. Research designed to study the functional role of PLK1 in these various disease states is hindered by the existence of few known specific inhibitors of PLK1 activity. The goal of this grant application is to transition a low throughput PLK1 Immobilized Metal Antibody-free Polarization (IMAP)-based fluorescence polarization (FP) assay to a high throughput capacity assay. The PLK1 IMAP FP assay would be used to screen large compound libraries for novel PLK1 inhibitors. Once identified and characterized these inhibitors can then be used as research tools to study the functional role of PLK1 in human disease.

Thesaurus Terms:
High throughput screening, Fluroscence polarization assay, FPA, PLK1 inhibitor, serine-threonine protein kinase, cancer, neurogenerative disease, Alzheimer's disease, simian immunodeficiency virus, SIV cytomegaloviral infection, papillomaviral infection, Immobilized Metal Antibody-free Polarization, (IMAP)

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