MOLECULAR STRUCTURE AND FUNCTION PROGRAM SEMINAR SERIES

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From Combinatorial Chemistry to Nanotechnology to Cancer Therapy

Abstract: In "one-bead one-compound" (OBOC) combinatorial technology, diverse peptides, peptidomimetics, or non-peptidic small molecules can be generated rapidly such that the library compound displays on the bead surface and coding tag resides inside each bead. Such chemically encoded microbead libraries can then be rapidly screened via on-bead assays or solution-phase releasable assays. Using these methods, many binding, biochemical, and cell-based screening assays have been developed and compounds against a variety of biological targets have been discovered. For example, LXY30, an optimized cyclic peptide ligand against α3β1 integrin, which is overexpressed in several epithelial cancers, is able to target both orthotopically and subcutaneously implanted glioblastoma xenografts with high efficiency. We will also describe a new category of amphiphilic polymers, comprised of a cluster of cholic acids linked by a series of lysines and attached to one end of a linear polyethylene glycol chain. Under aqueous conditions, such telodendrimers self-assemble to form highly stable monodisperse nanomicelles (15-150 nm diameter). Cancer targeting peptides decorated nanoparticles can deliver the drug not only to the tumor site but also into the tumor cells, making them more efficacious than nanoparticles without targeting peptides.

Date : Monday, May 6, 2013
Time : 1:00 - 2:00 pm
Location : Room 1250 Black Wing
The Hospital for Sick Children, 555 University Avenue

Host: Dr. Charles Deber

Pizza Lunch will be provided

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