

DOKTORETZA TESIA EGITERO ESKAINTZA / OFERTA PARA LA REALIZACION DE UNA TESIS DOCTORAL

Ikerketa taldea / Grupo de investigación:

Síntesis Orgánica en Química Médica (OSMC)

Webgunerako esteka / Enlace a la web:

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Saila / Departamento:

Química Orgánica I

Gaia / Tema:

This Thesis project aims to explore the development of novel dual-action prodrugs through the synthesis of tetrazine-based self-immolative systems. These systems are designed to release Topoisomerase I (TopI) inhibitors—such as camptothecin (CPT) derivatives—upon activation by intracellular triggers like hydrogen sulfide (H_2S), a stimulus overexpressed in certain tumor environments.

The project integrates multiple areas of medicinal chemistry: organic synthesis of tetrazine derivatives, preparation of self-immolative linkers, molecular docking studies, and biological evaluation. Once the prodrug is assembled, its capacity to protect the drug from premature degradation and selectively release it under tumor-like conditions will be evaluated.

The student will acquire advanced experimental skills in synthetic organic chemistry (including multistep synthesis and purification), gain experience in analytical techniques (NMR, MS, HPLC), and perform in vitro biological assays (TopI inhibition, cytotoxicity in human cancer cell lines such as A-549, SKOV3, HTC-116, and the non-cancerous MRC-5 line). Additionally, computational chemistry tools will be used to support the rational design of the self-immolative systems.

Eskaintza mota / Tipo de oferta:

Kontratua / Contrato

Beka eskaerak / Solicitud de becas

Betebeharak / Requisitos:

Poseer el grado en farmacia o en química.

Kontaktua / Contacto:

endika.martin@ehu.eus

945013807

