PEPTIDE-BASED SGLT2 INHIBITORS FOR CANCER THERAPY AND IMAGING

GMU-25-019

DUAL-ACTION PEPTIDES: INHIBIT, IMAGE, INNOVATE

Sodium-glucose cotransporter 2 (SGLT2) is an emerging target in cancer therapy due to its role in glucose metabolism and tumor progression. These novel SGLT2 inhibitors offer a promising alternative to conventional small-molecule inhibitors, providing both therapeutic and diagnostic capabilities in oncology. These peptides inhibit SGLT2 function while also enabling positron emission tomography (PET) imaging, making them versatile theranostic agents for cancer treatment and monitoring.

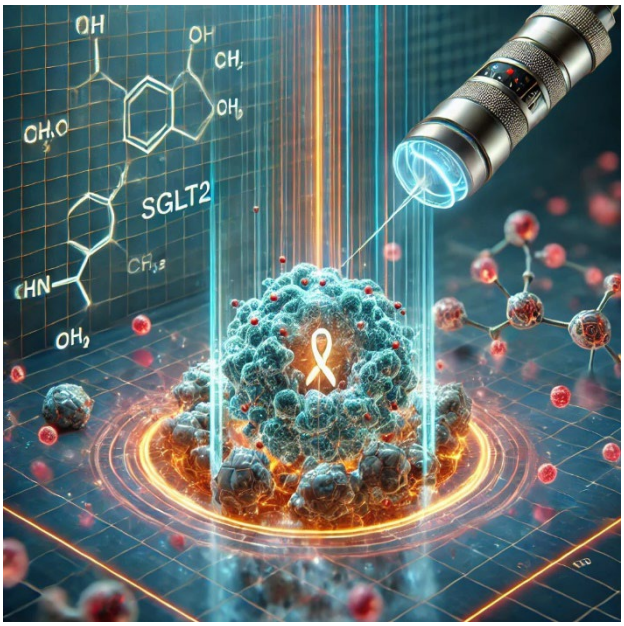
- ☑ **Dual Functionality (Theranostics) –** Simultaneously inhibits SGLT2 and serves as a PET imaging agent.
- ☑ **Targeted Cancer Therapy –** Through disruption of glucose uptake in tumor cells.
- ☑ **Enhanced PET Imaging Capability –** Built-in **metal-binding motif** improving real-time tumor visualization.
- ☑ **Improved Safety Profile –** Reduces off-target effects and toxicity associated with conventional SGLT2 inhibitors.
- ☑ **Customizable for Future Drug Development –** Structure allows for further modification to enhance binding affinity, stability, and therapeutic efficacy.

Applications

Cancer Treatment – A potential new class of peptide-based inhibitors targeting tumor metabolism.

Molecular Imaging – PET imaging agents for detecting SGLT2-expressing tumors.

Combination Therapy – Can be used alongside chemotherapy, radiation, or immunotherapy.



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