



**Team:** NTU\_Taiwan

**Project Title:** DNA Origami: A Novel Approach for Targeted Brain Tumor Therapy

**Abstract:**

In this study, we employed a novel approach for targeted brain tumor treatment by designing a triangular DNA origami structure that serves as a nanocarrier for antitumor drugs. To enhance drug delivery, the structure is equipped with an aptamer designed to facilitate interaction with and penetration through the blood-brain barrier (BBB). Our current experiments utilize a microfluidic model simulating the BBB, incorporating mouse bend.3 endothelial cells and ALT astrocytes to closely mimic barrier conditions. We expect that these DNA nanocarriers will advance drug delivery systems capable of traversing the human BBB, with potential applications in neuro-oncology.