

Development of a Quadruple-Conjugated Carbon Dot Nanomodel for Targeted Glioma Therapy

Emel Kirbas Cilingir^{1,2†}, Sajini D. Hettiarachchi^{1,3†}, Parth Rathee¹, Yiqun Zhou¹, Braulio CLB Ferreira¹, Lukun Wang¹, Annu Joji¹, Carlos M. Gonzalez⁴, Maria J. Moreno Hollweg³, Mehrdad Shiri⁶, Kun Wang^{1,5}, Rajeev Prabhakar¹, Steven Vanni^{3,6,7}, Roger M. Leblanc^{1*}, Regina M. Graham^{3*}

¹Department of Chemistry, University of Miami, 1301 Memorial Drive, Coral Gables, Florida, 33146, USA

²Sylvester Comprehensive Cancer Center, University of Miami Miller School of Medicine, Miami, FL, 33136, USA.

³Dr. Kiran C. Patel College of Allopathic Medicine, Nova Southeastern University, 7595 SW 33rd St, Ft. Lauderdale, FL, 33314, USA

⁴Department of Chemistry and Physics, Halmos College of Natural Sciences and Oceanography, Nova Southeastern University, Fort Lauderdale, FL 33314, USA

⁵Department of Physics, University of Miami, 1301 Memorial Drive, Coral Gables, Florida, 33146, USA

⁶Department of Neurological Surgery, University of Miami, Miller School of Medicine, Miami, Florida 33136, USA.

⁷HCA Florida University Hospital, 3476 S University Dr., Ft. Lauderdale, FL 33328, USA

†-Authors contributed equally to this work.

* Corresponding authors

Regina M. Graham, Ph.D.

Phone: +1 (305) 321-4972

Address: Nova Southeastern University Dr. Kiran C. Patel College of Allopathic Medicine, Center for Collaborative Research. Ft. Lauderdale. FL, 33328, USA

Email Address: rrgraham1@nova.edu

Roger M. Leblanc, Ph.D

Phone: +1 (305) 284-2194

Locater code: 0431

Address: University of Miami, Dept. Chemistry, 1301 Memorial Drive, Coral Gables, FL 33146, USA

Email Address: rml@miami.edu

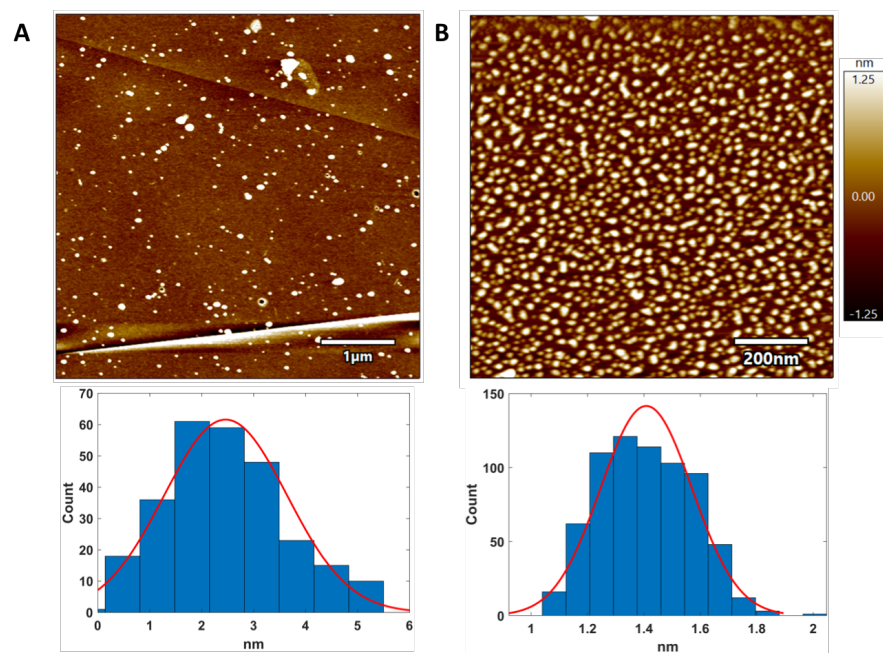


Figure S1. AFM images and histograms of (A) C-dot quadruple nanomodel and (B) bare C-dots.

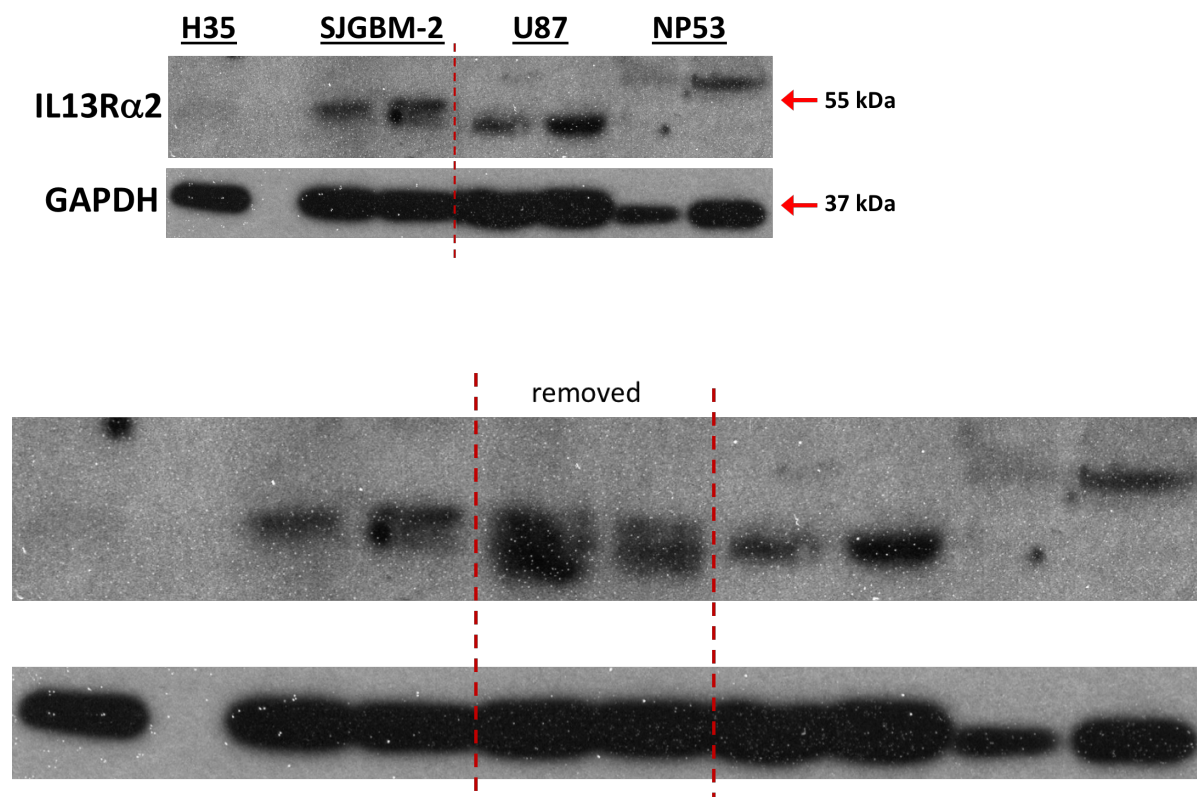


Figure S2. Expression of IL13Ra2 determined by western blot assay. Normal human progenitor cells N35 and 2 passages of each tumor cell line were assayed for IL13R α 2 expression. GAPDH was used as a loading control. Dotted red lines indicates where blot was cut.

Original western blots demonstrating where cut (red dotted lines). Probed with antibody that recognizes mouse and human IL13R α 2 and Loading control-GAPDH. Both blots were cropped to remove 2 samples in middle not relevant to paper (red dotted lines)

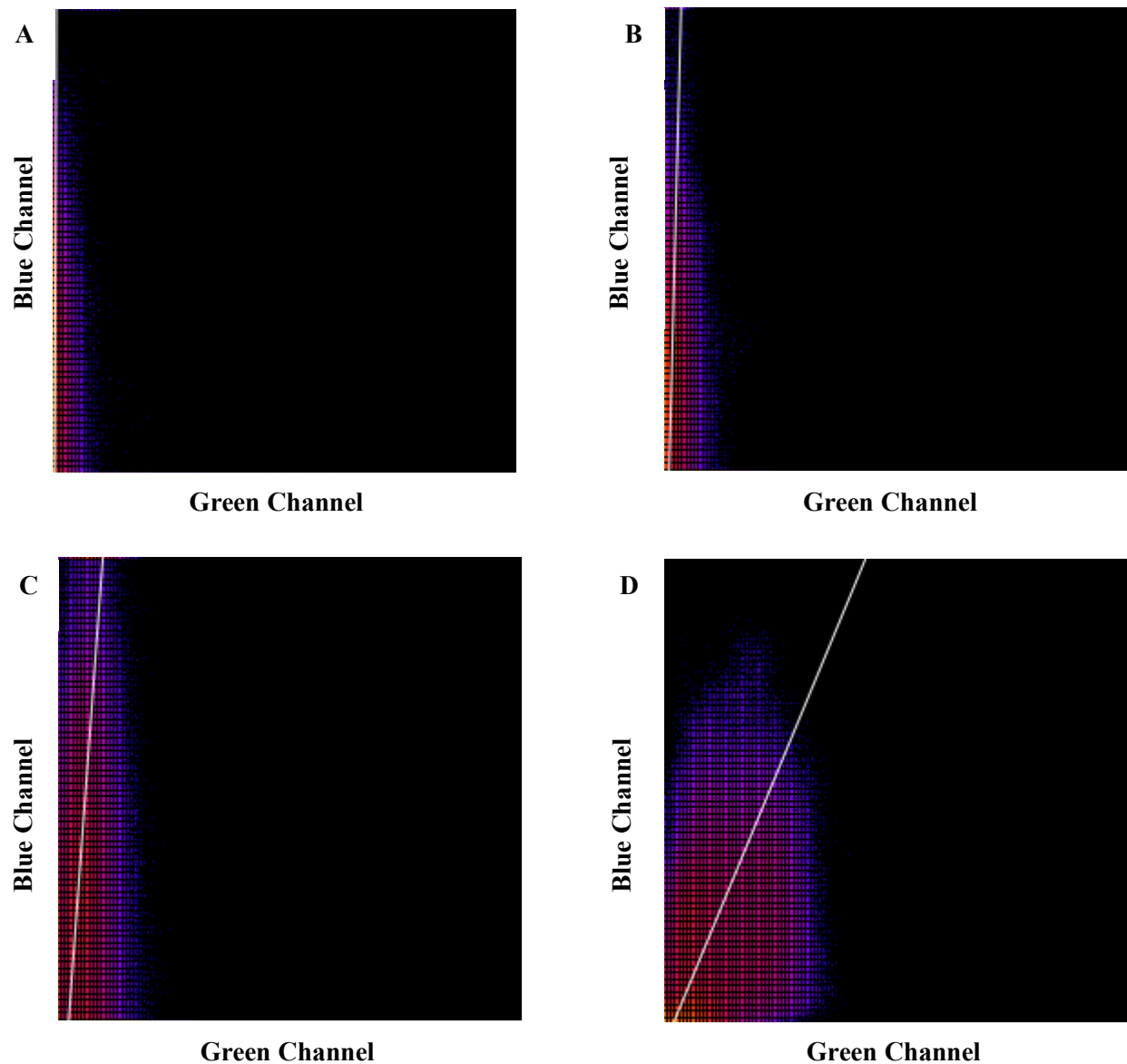


Figure S3. 2D intensity histogram graphs of A) C-Dots-5-Amfl. B) C-Dots-5-Amfl-shPep-1. C) C-Dots-5-Amfl-lnPep-1. D) C-Dots-5-Amfl-shPep-1-lnPep-1. Excitation wavelengths of the blue

and green channels are 405 and 488 nm, respectively. Emission ranges: Blue, 441–481 nm, Green, 480–520 nm.