

Wednesday, 11th December, 12.00 pm, Seminar Room

Host: Dr. Pedro Ramos

Delivery of therapeutic agents to the brain guided by multimodality imaging

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Brain due to its sequestration behind anatomical and physiological barriers is particularly difficult target for delivery of therapeutic agents. Indeed, systemic delivery of macromolecules or stem cells as well as majority of small molecules results in frustratingly low brain accumulation often. below 1% of injected dose. To tackle this problem my group is exploiting intraarterial route to deliver high concentration drugs locally at the target with minimal systemic exposure. We perform transient opening of the blood brain barrier using osmotic technique to improve parenchymal accumulation and we utilize multimodality imaging to assure precision and predictability of both blood brain barrier opening and drug accumulation. We have shown that such an approach improves targeting of stem cells, monoclonal antibodies or nanobodies by at least two orders of magnitude comparing to systemic injection.