Angiostamp™, a NIR fluorescent probe for tumor imaging

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Intraoperative fluorescence imaging is becoming an important modality, which is increasingly used pre-, intra- and post-operatively in different clinical fields such as perfusion assessment (1-2), sentinel lymph node detection (3-4), lymphedema evaluation (5-6) or liver surgery (7). In cancer surgery, this technique would be very helpful by providing real-time image guidance to surgeons for tumor tissues that need to be resected with a better definition of margins and real-time visualization of metastases. To become a clinical reality, NIR fluorescent contrast agents targeting specifically tumors are needed.
Angiostamp™, a contrast agent developed by Fluoptics, is a fluorescent peptidic molecule targeting a_vb_3 integrin, a receptor overexpressed in many tumors (breast cancer, ovarian cancer, glioma, sarcoma …). In this presentation, we summarize the different characteristics of Angiostamp™ that make it a good candidate for intraoperative tumor imaging and its level of development for future clinical applications.

References

[1] M. Sood and al. (2013), Potential of the SPY intraoperative perfusion assessment system to reduce ischemic complications in immediate postmastectomy breast reconstruction. Annals of Surgical Innovation and Research
[2] E. Komorowska-Timek and al. (2010), Intraoperative Perfusion Mapping with Laser-Assisted Indocyanine Green Imaging Can Predict and Prevent Complications in Immediate Breast Reconstruction. Plastic and Reconstructive Surgery
[3] M. Takeuchi and al. (2012), Lymphatic mapping with fluorescence navigation using **i**ndocyanine green and axillary surgery in patients with primary breast cancer. The Breast Journal
[4] B. Ballardini and al. (2013), The indocyanine green method is equivalent to the ^{99m}Tc-labeled radiotracer method for identifying the sentinel node in breast cancer: a concordance and validation study. European Journal of Surgical Oncology
[5] N. Unno and al. (2007), Preliminary experience with a novel fluorescence lymphography using indocyanine green in patients with secondary lymphedema. Journal of Vascular Surgery
[6] S. Akita and al. (2013), Comparison of lymphoscintigraphy and indocyanine green lymphography for the diagnosis of extremity lymphedema. Journal of Plastic, Reconstructive & Aesthetic Surgery
[7] Y. Kawaguchi and al. (2013), Portal uptake function in veno-occlusive regions evaluated by real-time fluorescent imaging using indocyanine green. Journal of Hepatology