Seminario CIPF

Orthoxenografts a feasible strategy to personalize patient’s treatment

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**Abstract:** Personalize the tumor patient treatment in mice it is a complex process that it just begin in the moment of tumor resection, or after tumor-biopsy taken. Several important variables should be taken in consideration through this process in mice: (i) the site of tumor implantation (subcutaneous versus orthotopic implantation); (ii) tumor take-rates; (iii) synchronize tumor-time growth in both patients and mice; (iv) time needed for mice treatment-response and the window of time available for patient treatment; (v) the extension of the genetic tumor characterization (driving mutations vs. exome sequence; (vi) categorization in function of histo-genetic properties; (vii) existence of solid evidences about the correlation among specific genetic tumor alterations and drug responses; (viii) concordance among drug response for subcutaneous vs. orthotopic engrafted tumors; (ix) Can we treat patients with the best drug-response identified in mice? really applied in patients?; (x) it is a feasible strategy to apply in large series of patients.

To go in depth in the analysis of these variables we have engrafted the same primary human tumors (mainly colorectal, epithelial ovarian cancer (EOC) and lung tumors) subcutaneously and or orthotopically (named orthoxenografts) in nude mice. Our work indicates that although generation of orthoxenografts is a more complex and expensive process, we have generated evidences that orthoxenografts should have important advantages to personalize patient’s treatment.