

POSTER SESSION 14: Preclinical test models

P14.1

Combination of BRAF and EGFR inhibition in PDXs of BRAF mutant recurrent and metastatic colorectal cancer

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Purpose: To evaluate efficiency of BRAF inhibitor combined with EGFR inhibitor in PDXs of BRAF V600E-mutant recurrent and metastatic colorectal cancer.

Materials and Methods: Twenty-three PDXs models of recurrent and metastatic colorectal cancer were established by biopsy specimen, of which four ones were detected BRAF V600E-mutation. BRAF mutant PDXs were selected and cultivated to F2 generation, then each model was divided into four groups: BRAF inhibitor (Group A), EGFR inhibitor (Group B), BRAF and EGFR inhibitor (Group C), placebo (Group D). After three weeks, the efficiency was evaluated by tumor volume, immunohistochemical method and metabolic activity of small animal PET.

Results: The tumor inhibition rate of each group was 23.5%, 23.6, 72.9% and 0, respectively. Group C had the most significant reduction of tumor volume and metabolic activity ($P < 0.05$). Group A showed high expression of EGFR, while Group C displayed high expression of MLH1 but low expression of EGFR, Ki-67 and COX-2.

Conclusion: Combination of BRAF and EGFR inhibitor had high efficiency in PDXs of BRAF V600E-mutant recurrent and metastatic colorectal cancer, and the two showed coordination mechanism.

P14.2

Establishment of patient-derived xenografts models of recurrent and metastatic colorectal cancer based on CT-guided biopsy

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Purpose: To establish patient-derived xenografts (PDXs) models of recurrent and metastatic colorectal cancer by CT-guided biopsy. **Materials and Methods:** A total of thirty-four colorectal cancer patients after curative resection were performed CT-guided biopsy because of suspicion of recurrence and/or metastasis. Part of tissue specimen for histological diagnosis was reserved, the rest was cut into small pieces to transplant to nude mice subcutaneously, which was marked F0 generation. When cultivated to F2 generation, hematoxylin-eosin and immunohistochemical staining and gene mutation test were done, then compared with the biopsy specimen. **Results:** In the present study, twenty-three of the thirty-four biopsy specimen was confirmed recurrence and/or metastasis. Altogether sixteen PDXs models of recurrent and/or metastatic colorectal cancer were built, and the success rate was 69.6% (16/23). The PDXs models manifested high consistency with the corresponding patients' biopsy specimen. **Conclusion:** Establishment of PDXs models of recurrent and metastatic colorectal cancer by CT-guided biopsy was not only minimal invasive but also had high success rate and consistency.