1-P2-46 Poster Sessions

Establishment of a culture method of the dog lung cancer organoid

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【Backgrounds】
Dog lung cancer is a kind of tumor with a low incidence but often already advanced at the time of diagnosis and has a poor prognosis. Moreover, due to the shortage of the number of cases, there are few suitable experimental model cells. Therefore, we focused on the organoid culture method that has been applied to tumor research in recent years.
【Materials and methods】
The organoid culture model was prepared from a tumor sample of a dog suffering from lung cancer which underwent lobectomy. We compared the differences in lung tissue marker expression in the organoids with the original tissues. In addition, the lung organoids were treated with anti-cancer drugs or molecular-targeted drugs such as carboplatin and lapatinib, and we evaluated the difference in cell viability for the drugs.
【Results and discussions】
The organoids created from the lung cancer tissue kept the character of the original lung tissue. In addition, there were clear differences in cell viability of organoids against each anti-cancer drugs, showing resistance to doxorubicin, carboplatin, methotrexate and cyclophosphamide, and susceptibility to cisplatin and paclitaxel. Furthermore, lung organoids showed resistance to gefitinib and susceptibility to lapatinib. Our results suggest that using organoids made us compare to the differences in sensitivities in many kinds of drugs in one individual. The organoids created from the lung tissue of the dog suffering from the lung cancer will be able to be taken advantage of as a valuable experiment model.