Quantitative measurement of immune-modulatory mediators within tumors of freely moving mice utilizing in vivo microdialysis

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1 INTRODUCTION

Monitoring changes in biochemical elements within tumors is crucial to understanding cancer biology and to helping with the development of novel therapies. Yet to date, experimental techniques enabling sensitive and quantitative measurement of the levels of small molecules contributing to tumor development have been limited in preclinical oncology models.

AIM OF THE STUDY

Implementing *in vivo* microdialysis to measure signaling molecules and oncometabolites levels in the tumor microenvironment of freely moving rodents

2 METHOD

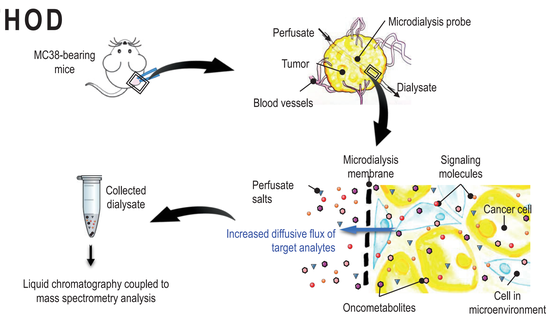
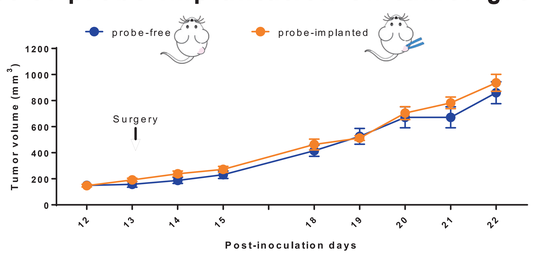


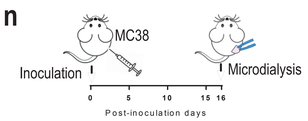
Table 1. *In vitro* probe recovery (%) of analytes of interest

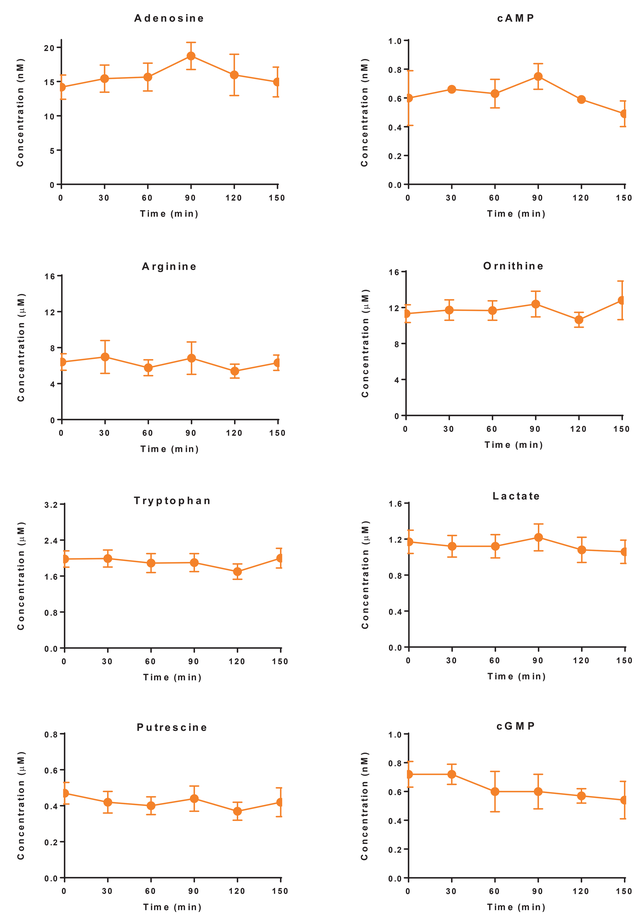
	Adenosine	cAMP	cGMP	Arginine	Lactate
Mean	35.51	29.44	27.88	35.56	47.28
SEM	2.56	2.83	2.52	3.86	3.58

3 Effect of probe implantation on tumor growth

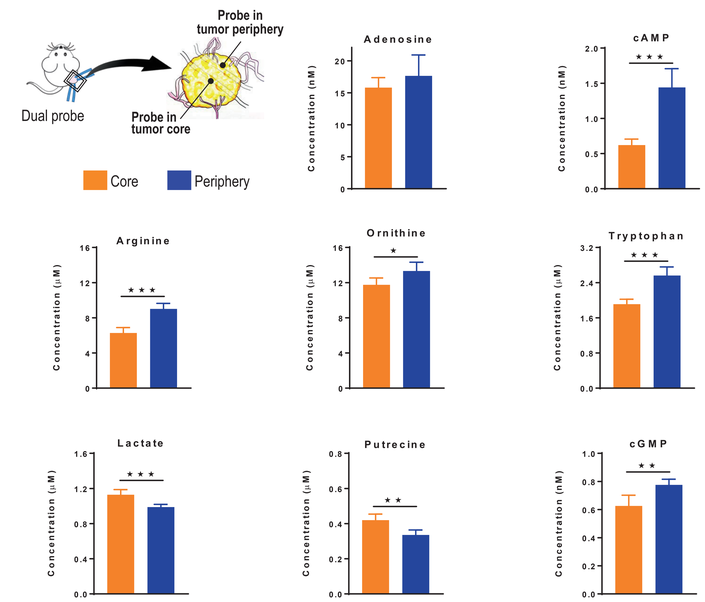


4 Sensitive quantification of analytes levels





5 Differences in analytes levels between core and periphery of the same tumor



*P<.05, **P<.005 and ***P<.0005 core vs. periphery, unpaired Student's t-test

6 CONCLUSION AND PERSPECTIVES

The current results demonstrate a quantitative and sensitive method for the detection of multiple immunomodulators and oncometabolites from tumor bearing mice. In vivo microdialysis in murine tumor models may be used to elucidate the mechanisms by which therapies, such as chemotherapy and immune checkpoint inhibitors, modulate the tumor microenvironment. Microdialysis of tumors has the potential to bring new insights into the mechanisms underlying cancer development and help the discovery of next-generation therapies for cancer.