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INTELLECTUAL PROPERTY PROTECTION IN THE AGE OF SPACE COMMERCIALIZATION:  
TERRITORIALITY IN THEORY AND NON-TERRITORIALITY IN PRACTICE

**Abstract**

Space is a domain propelling new technologies, governmental investments and private space actors and it also holds within it the possibility of shaping the future of humanity. In this context, space commercialization and capitalist space agencies are fuelling the growth of outer space innovation. Scholars have made significant strides in the continuously evolving field of medical sciences, yet certain questions remain unanswered. To address these inquiries, researchers are turning to a new frontier - Space. Recent advancements in space technology have opened up new possibilities for pharmaceutical research beyond our planet's boundaries. Given the omnipresence of gravity on Earth, one might not immediately see the value in contemplating its influence on experiments. Earth's gravitational pull makes it difficult to cultivate proteins needed to study diseases and pathogens however, favourable conditions can be achieved in the micro-gravitational field of Earth's lower orbit. Researchers are capitalising on the microgravity in space to accelerate the drug discovery and development of cure for cancers, blindness and more. The synthesis and testing of these drugs are often done on the International Space Station (ISS) stationed in the lower Earth orbit (LEO). However, this frontier of drug development is not without its legal complexities. One recent example that underscores the importance of this research is the discovery of novel drug targets in cancer cells grown in microgravity aboard the International Space Station. This finding has the potential to revolutionize cancer treatment on Earth but raises questions about the ownership of intellectual property for drugs developed in space, a common heritage of mankind. The space law treaties say that the state in which the space object is registered retains authority and control over that space object, even when patent protection is subject to the applicable territorial legal framework. The issue is whether each national or regional legislation may be extended to the objects that the respective nation has registered and launched into space under the IP law's territorial authority. This paper delves into the legal aspects of developing and testing of drugs in space, addressing the ownership of intellectual property rights and safeguarding them. The paper also explores how the lack of effective IP protection mechanisms will demand states to redefine the foundations of outer space medicine research with the perspective of patent rights.