

International Space Station astronauts tested with York Company's diagnostic test
Looking at effects of space travel on immune system as part of planning for trips to Mars

Over many years of space travel, research has been carried out to understand the effects of space travel on the human body, in which time there have been associations made between dysregulation of the immune system and extended periods in space.

The obvious concern of any effect on the astronaut's health is the potential for any future space missions to be compromised, in particular, missions to Mars in the case of NASA, or indeed any commercial space travel ambitions that SpaceX and Virgin Galactic may have.

In a joint study, Louisiana State University and the University of Houston, and working with experts from NASA and the University of Bath, used York-based company Abingdon Health's free light chain (FLC) ELISA ([Seralite®-FLC ELISA](#)) diagnostic test to help assess the impact of long duration spaceflight on the function of blood plasma cells and therefore the functionality of the immune system during space travel.

Seralite®- FLC ELISA was used to measure FLCs in astronauts' plasma and saliva using samples taken before, during and after spending 6 months in the International Space Station. FLCs were of interest to NASA because these proteins provide a near 'real-time' indicator of plasma cell activity.

Dr John Campbell, from the University of Bath, who worked with Louisiana State University during this project comments:

"For some time now there has been speculation that changes to plasma cell activity arise during spaceflight. The use of Seralite®- FLC ELISA allowed us to sensitively monitor changes in plasma cell activity over time and our detailed analysis indicated that plasma cell activity is unchanged during spaceflight."

Dr Guillaume Spielmann (Louisiana State University) added:

"Our results show that relatively short duration of spaceflight, of up to 6 months, might not be as damaging to the functionality of plasma cells as previously hypothesized. However, more research is now needed to determine whether longer duration spaceflight – for example, over many years - has any effect on immunity so that we can have confidence that the immune system is not compromised in future manned missions to Mars."

About [Abingdon Health](#)

Abingdon is a UK-based developer and manufacturer of immunoassay tests and readers.

Internally Abingdon is focused on developing assays, in partnership with key opinion leaders, which meet currently unmet needs. In addition, Abingdon offers development and manufacturing services for customers looking to develop new assays or looking to transfer existing laboratory-based assays to a lateral flow format. Abingdon take projects from initial concept through to routine and large - scale manufacturing.

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References: <https://www.abingdonhealth.com/wp-content/uploads/2018/06/ACSM-2018-poster.pdf>