



Leukin (Role of the interleukin-2 receptor in signal transduction)

Ames Research Center

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Objective:

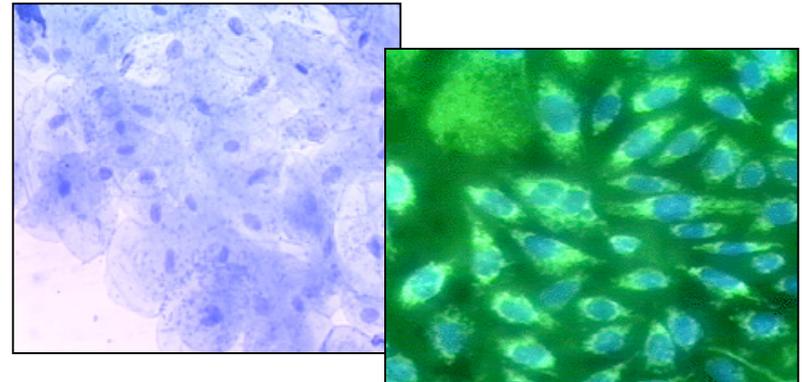
- ◆ To determine the effects of spaceflight on immune function, specifically the potential dysfunction of T-Cells

Relevance/Impact:

- ◆ Immunosuppression has been reported in a number of previous flight experiments and ground-based studies using flight analogue systems. The potential impact of immunosuppression is increased risk of severe illness during a mission.

Development Approach:

- ◆ This experiment was selected as a collaborative NASA/ESA experiment during the last International Space Life Sciences NRA. ESA hardware was selected to accommodate the experiment and ESA agreed to manage the development of the experiment. NASA responsibility is to provide the PI grant and consult as required.
- ◆ The experiment was launched from Baikonur on Soyuz 13S in Sept. 06. Due to an ISS experiment execution error, the experiment was conducted for only 1.5 hr. out of the 4 hours planned.
- ◆ Ground based experiments have been conducted to identify genes at 1.5hr.
- ◆ Cell number, glucose utilization, and RNA quantification have been measured and Gene array and analysis for the flight samples is complete. Real-time Reverse Transcriptase-Polymerase Chain Reaction (RTPCR) analysis of the flight samples will be done on the top 10 regulated genes in the 1.5 hr samples.



ISS Resource Requirements

Accommodation (carrier)	Middeck
Upmass (kg) (w/o packing factor)	ESA Allocation
Volume (m³) (w/o packing factor)	ESA Allocation
Power (kw) (peak)	ESA Allocation
Crew Time (hrs) (installation/operations)	ESA Allocation
Launch/Increment	Soyuz TMA 13S

Project Life Cycle Schedule

Milestones	PDR	CDR	CT	Safety	FRR	Launch	Ops	Return	Final Report
Actual/ Baseline	ESA	ESA	ESA	ESA	ESA	Sept 2006	Sortie	Sept. 2006	Return + 12m