

SPACE LIFE SCIENCES SYMPOSIUM (A1)  
Radiation Fields, Effects and Risks in Human Space Missions (4)

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ANTIOXIDANT AND ANTI HEAVY ION RADIATION ACTIVITY ON DIFFERENT PARTS OF  
LESSER KHINGAN MOUNTAIN MANYPRICKLE ACATHOPANAX

**Abstract**

Scope: Manyprickle Acatopanax (*M. Acatopanax*) is rich in Lesser Khingan Mountain China. It offers many of the functional benefits as excitation, inhibition, anti fatigue, bacterial , inflammatory, edema ,chloasma and insomnia.The objective of this study was to compare the components' effects in different parts of *M. Acatopanax* on antioxidant and anti heavy ion radiation activity.

Methods and results: Antioxidant root, stem, leaf and fruit extraction activities of selected Lesser Khingan Mountain Manyprickle Acatopanax (*M. Acatopanax*) were evaluated using DPPH and ABTS techniques. The data was analyzed by Principal Component Analysis. The antioxidant activity values derived from the various methods used were correlated. The effectiveness of the extractions decreased in the order of stem;root;fruit;leaf. The flavones and Polysaccharides in *M. Acatopanax* showed the best effect in vitro. SOD and MDA in radiated livers, kidneys, spleens, brainstems and testicles of mice were compared with in vivo experiments to look for optimal component combination for anti space radiation. Western-blot and 2-DE method were used to detected the levels of ECSOD, CuZnSOD, MnSOD and proteom in mouse spleen and liver for further vivo studay.

Conclusion: The Flavones and Polysaccharide purified from *M. Acatopanax* should be explored as a novel and potential natural antioxidant and resist radiation agent for use in functional foods or medicine. The active ingredients can target at special proteins after radiation.ECSOD was obviously changed in different group in the whole processing and other 2 protiens in endoplasmic reticulum also sensitive to those active components.