2023 Joint Usage and Research Report

<table>
<tr><td colspan="2">Title of Research Project</td><td colspan="3">Innate immune responses of selected local Nigerian herbs that have anticancer activity on macrophages and their effects on prostate and breast cancer cells in vitro and in vivo.</td></tr>
<tr><td rowspan="2">Applicant</td><td>Institution</td><td>University of Abuja</td><td>Under40 put a ○</td><td>Under35 put a ○</td></tr>
<tr><td>Job title and Name</td><td>Director, Central Laboratory Services and Head of Department, Microbiology Department.</td><td></td><td></td></tr>
<tr><td rowspan="4">Research collaborators
(Please add lines as appropriate)</td><td>Institution</td><td></td><td></td><td></td></tr>
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<tr><td colspan="2">Host researcher at IGM</td><td colspan="3"></td></tr>
<tr><td colspan="2">Purpose of the Research Project
(approx. 250 words)</td><td colspan="3">1. To determine the effects of local herbs on the TNF signaling pathway in vitro.
2. To determine the effects of local herbs in vitro on prostate cancer and breast cancer cell lines.
3. To determine in vivo effects of local herbs on innate immune response and cancer reduction in tumorigenic mouse models.</td></tr>
<tr><td colspan="2">Development of the Research Project and Results
(approx.. 850 words)
*Enter the number of web meetings.</td><td colspan="3">The Nigerian plants below were processed in the University of Abuja laboratory into aqueous, ethanolic and methanolic extracts:
Euphorbia hirta Asthma plant
Telfairia occidentalis Ugwu leaf
Sorghum bicolor W. African Sorghum bicolor
Manihot esculenta Cassava Leaf
Annona muricata Soursop Leaf
These plant extracts were brought to the Institute for Genetic Medicine, to Professor Akinori Takaoka's lab, in the Signaling in Cancer and Immunology unit.
TESTS DONE:</td></tr>
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1) Effect of plants extract on the IFN induction in HT29 cells
2) Effect of plants extract on the viability of the following cancer cells:

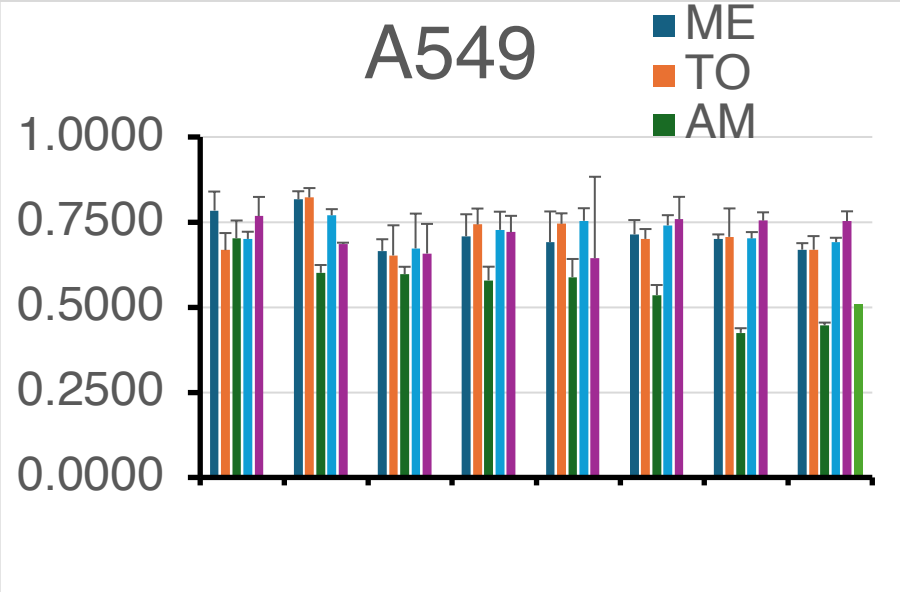
A549 cells (lung)
HT29 cells (colon)
MCF7 cells (breast)
PC3 cells (prostate)

RESULTS:

There were no effect of plants extract on the IFN induction HT29

These other cell lines were contaminated when resuscitated from Nitrogen tank: A549 cells (lung), MCF7 cells (breast)
PC3 cells (prostate).

Aqueous extract of *Annona muricata* (Soursop Leaf)
reduced A549 cells viability in a dose dependent manner. There were no observable effects of the other plant extracts on this cell line.



AM= *Annona muricate*, TO= *Telfairia occidentalis,* ME= *Manihot esculenta*

FUTURE STUDIES:

1. Test the other cancer cell lines for IFN induction and viability tests after treatment with all the plant extracts.
2. Explore the role of these plant extracts in proinflammatory signaling pathway via Toll Like Receptors.

Drawbacks:

I only spent 4 days in Prof. Takoaka's Laboratory leading to insufficient time spent in the lab to carryout enough experiments. A time extension will provide meaningful research experience and more data generation.

Publication *Enter the information of conference or journal (vol. page. Year.) where the above work was presented.	【Conference, symposium, workshop etc.】 None
	【Journals】 None