A PIONEER CASE OF TRANSLATIONAL RESEARCH IN DRUG DISCOVERY AND DEVELOPMENT IN BRAZIL:

THE IMMUNOMODULATOR P-MAPA

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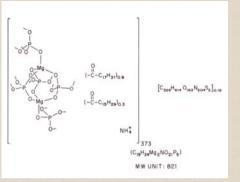


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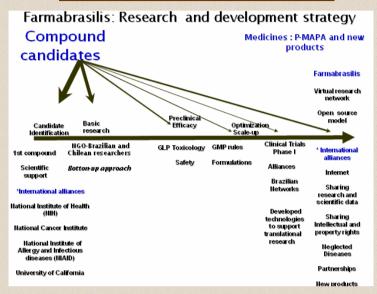


PROTEIN MAGNESIUM AMMONIUM PHOSPHOLINOLEATE-PALMITOLEATE ANHYDRIDE (P-MAPA)



Proteic aggregated polymer isolated from Aspergillus oryzae

Farmabrasilis: Research and development strategy



P-MAPA Biological Properties

Non cytotoxic or genotoxic in vitro to V79 cells, lymphocytes and 53 tumor cell lines (NCI-EORTC-NDDO)

Non teratogenic *in vivo* to mice and rats

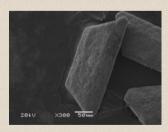
P-MAPA

Non toxic to humans Clinical trial-phase I Antiviral - Antitumoral __ Immunomodulating properties

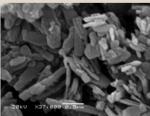
Non toxic in vivo to mice, rats dogs and monkeys

- ✓ Antiviral effects *in vivo*: Herpes virus (HSV and VZV), HPV, Punta toro virus (PTV)
- ✓ Antimicrobial effects in vivo: L.monocytogenes, Plasmodium sp, Leishmania sp.
- ✓ Antitumoral effects *in vivo:* Walker 256, Lewis lung carcinoma, Renal carcinoma, Mammary carcinoma, Plasmacitoma, Lymphosarcoma-180, Ehrlich ascitic tumor (EAT)
- ✓ Antimetastatic properties : Renal carcinoma (RENCA)

P-MAPA Scanning Electron Micrographs



P-MAPA



P-MAPA Homogenized under high pressure



P-MAPA Homogenized under high pressure

Conclusions

- The discovery and development of P-MAPA immunomodulator is a pioneer case of translational research in Brazil
- ▶ P-MAPA is one of a few compounds developed in Brazil to undergo until clinical trials
- A bottom-up problem oriented approach can be more effective than top-down
- Drug development can also be achieved in developing countries, outside big pharmaceutical companies

Support : Farmabrasilis (Brazil) - NIH (USA)

Farmabrasilis is seeking collaborators and partners for the production and distribution of new medicaments for the benefit of economically disadvantage populations and individuals affected by neglected diseases

When appropriated, our medicines can be licensed without royalties in order to allow their use by economically disadvantaged populations