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## POSSIBLE EXPERIMENTAL MODELS FOR LEPROSY RESEARCH

A gradual technological advancement can be clearly seen in the Tropical Countries, by accepting the super technological approach in handling infectious diseases. In this regard, Brazil probably heads the list. Whenever such biotechnological approaches are adopted in studying diseases like leprosy, they appear to be employed as a kind of trend setter and with little critical aptitude in the context of innovative patients' care. Leprosy is believed to be an immune mediated disease that primarily affects both skin and peripheral nerves, although exact mechanism is yet to be elucidated optimally. Such gap in our knowledge is probably due to the lack of suitable in vivo and ex-vivo experimental models that are yet to be used for leprosy research. In this short presentation, some experimental models will be illustrated which can be considered to be used for leprosy research in future. Among such models the followings can be earnestly given consideration by leprosy researchers:

- 1) Humanised SCID mice <sup>1,2</sup>;
- 2) Xenotransplanted human tissue onto SCID mice <sup>3</sup>;
- 3) Transgenic mouse models <sup>4</sup>;
- 4) Molecular Knockout mice <sup>5,6</sup>;
- 5) Human organotypic human skin explants culture (hOSEC) model and not last but the least laboratory made skin tissues <sup>7,8,9</sup>.

These models are in addition to the C57Bl/6 and BALB/c mice models which had been extensively used for monitoring bacterial growth in response to anti *M. leprae* drugs <sup>10,11,12</sup>. Drug resistance testing has been done for decades at Instituto Lauro de Souza Lima (ILSL), so far we have detected dapsone and rifampin resistant strains by the mouse foot pad technique, thus, these strains will be tested by molecular biology technique to confirm or not the finding.

Despite, in Brazil, BALB/c mice have been used for drug screening and drug resistance studies, nude mouse would produce positive inoculation, because even with low bacillary loads the response is more sensitive. Inoculated nude mice can concomitantly be used in the maintenance of strains, as well as setting up of models for neuropathy. We have recently succeeded in the inoculation of nude mice with *M. leprae* at ILSL, opening new perspectives for leprosy studies in Brazil.

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