REPORT FORM FOR INTERNATIONAL JOINT USAGE/RESEARCH PROGRAM AT MRI TMDU

1. **Title of Project**
   Comparative study of HIV/AIDS-associated genome diversities between India and Japan

2. **Form of Collaboration**
   *Choose one from the following forms*
   a) Visiting MRI and conduct proposed project using our facilities
   b) Performing proposed project through host investigator using bio-resources deposited in MRI
   c) Performing proposed project through host investigator using database deposited in MRI as a limited use

3. **Applicant Information**
   - **Name (Last, first, middle):**
   - **KAUR Gurvinder**
   - **Position Title**
   - **Senior Scientist**

   Applicant Organization
   All India Institute of Medical Science

   E-Mail address: gurvinder@hotmail.com

4. **Project Duration (month, day, year)**
   - **From:**
     October 1, 2014
   - **Through:**
     March 31, 2016

5. **Project Members**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution/Department</th>
<th>Position Title</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gurvinder KAUR</td>
<td>AIIMS/Lab Oncology</td>
<td>Senior Scientist</td>
<td>Gene analysis, DNA sampling</td>
</tr>
<tr>
<td>Gaurav SHARMA</td>
<td>AIIMS/Lab Oncology</td>
<td>Research Scientist</td>
<td>Gene analysis, DNA sampling</td>
</tr>
<tr>
<td>Akinori KIMURA</td>
<td>MRI/ Molecular Pathogenesis</td>
<td>Professor</td>
<td>Statistical analysis</td>
</tr>
<tr>
<td>Daisuke SAKURAI</td>
<td>MRI/ Molecular Pathogenesis</td>
<td>Ass Professor</td>
<td>Cellular analysis</td>
</tr>
<tr>
<td>Taeke K. NARUSE</td>
<td>MRI/ Molecular Pathogenesis</td>
<td>Ass Professor (project)</td>
<td>Gene analysis</td>
</tr>
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6. **Signature of Applicant**

I certify that the statements herein are true, complete and accurate to the best of my knowledge.

Signature

Date May 19, 2016
7. Report

In this study, we investigated the association of susceptibility to HIV infection and/or AIDS development with human genome diversity, including polymorphisms in genes from specific nature of evolutionary selection and those in the HLA-linked immune modulating gene. We have carried out a comparative study between Asian Indians and Japanese, because most of the previous researches on human genome diversities associated with the susceptibility to HIV/AIDS were mainly performed in European descendent and Africans with a few studies in Asians, especially in Asian Indians.

We have investigated several candidate genes for the association with HIV/AIDS in this study, and one of the most interesting findings was the association of APOBEC3H haplotypes with HIV-1 infection as well as development of AIDS in both Japanese and Asian Indians. Another interesting finding was that promoter polymorphisms or haplotype in a HLA-linked immune modulating gene, which was associated with expression level, were associated with the susceptibility to HIV infection; more specifically the frequency of low-expression haplotype was significantly decreased in the HIV-infected subjects. We also revealed that over-expression of this gene in epithelial cell line (COS cell) and T cell line (Jurkat cell) suppress the production of p24 after transfection/infection with HIV, suggesting that the tested HLA-linked immune modulating gene was involved in the regulation of HIV replication and therefore the low-expression haplotype was associated with the susceptibility to HIV infection.

8. Research outcome from the Project

<Publications> (underlined for participants)


<Patent Applications>
None