As an example of transformation of Cluster Complex according to the sequencing size is shown in Figure 1

**Conclusion**: Artificial methods of subspecies typing gives a relative picture of the genetic relationship and clonal structure of microorganisms.

http://dx.doi.org/10.1016/j.ijid.2016.02.715

**Type**: Poster Presentation

**Final Abstract Number**: 42.254  
**Session**: Poster Session II  
**Date**: Friday, March 4, 2016  
**Time**: 12:45-14:15  
**Room**: Hall 3 (Posters & Exhibition)

### In silico comparison of different PFGE and wgMLST

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**Background**: Pulsed field gel electrophoresis (PFGE) is acknowledged to be the ‘gold standard’ for the typing of strains of a number of bacterial species, including E. coli, and is used widely in clinical settings (van Belkum A., 2007).

**Methods & Materials**: In silico PFGE analysis of 138 complete E.coli genomes using classical XbaI and 5 other enzymes (Sse8647I, Apal, AcIN, SrfI and SdiI) have been performed by Geneious (Biomatter). Images with gel pattern have been analyzed by Total-Lab 1D (Nonlinear Dynamics) to produce band matrix. wgMLST scheme with 2216 loci have created with SeqSpere (Ridom). Discriminatory power and concordance between different PFGE and wgMLST have been estimated based on Simpson and adj.Rand and Wallace indices.

**Results**: 138 genomes of E.coli have been used to produce different PFGE and wgMLST patterns. Sites of restriction, band (loci) numbers and discriminatory power are presented in Table 1.

<table>
<thead>
<tr>
<th>Enzyme</th>
<th>Recognition sequence</th>
<th>Median of band number (95%CI)</th>
<th>#different types</th>
<th>Discriminatory index</th>
<th>Confidence interval (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XbaI</td>
<td>TCTAGA</td>
<td>27-51</td>
<td>131</td>
<td>0.999</td>
<td>[0.998 - 1.0]</td>
</tr>
<tr>
<td>Sse8647I</td>
<td>AGGWCCT</td>
<td>57-104</td>
<td>131</td>
<td>0.999</td>
<td>[0.998 - 1.0]</td>
</tr>
<tr>
<td>Apal</td>
<td>GGGCC</td>
<td>62-130</td>
<td>132</td>
<td>0.999</td>
<td>[0.998 - 1.0]</td>
</tr>
<tr>
<td>AcIN</td>
<td>ACTAGT</td>
<td>53-95</td>
<td>132</td>
<td>0.999</td>
<td>[0.998 - 1.0]</td>
</tr>
<tr>
<td>SrfI</td>
<td>GCCCCGGCC</td>
<td>41-65</td>
<td>132</td>
<td>0.999</td>
<td>[0.998 - 1.0]</td>
</tr>
<tr>
<td>SdiI</td>
<td>GGCNNNGGCCC</td>
<td>31-66</td>
<td>132</td>
<td>0.999</td>
<td>[0.998 - 1.0]</td>
</tr>
<tr>
<td>wgMLST</td>
<td>2216 loci</td>
<td>-</td>
<td>-</td>
<td>0.999</td>
<td>[0.998 - 1.0]</td>
</tr>
</tbody>
</table>

The concordance between different PFGEs and wgMLST calculated on cluster complex is presented in Table 2.

**Conclusion**: PFGE using different restriction enzymes, which have different site restriction and produce different number (27-130) of band, have not shown the advance in discriminatory power and concordance with wgMLST.

http://dx.doi.org/10.1016/j.ijid.2016.02.716

**Type**: Poster Presentation

**Final Abstract Number**: 42.255  
**Session**: Poster Session II  
**Date**: Friday, March 4, 2016  
**Time**: 12:45-14:15  
**Room**: Hall 3 (Posters & Exhibition)

### Hemophagocytic Lymphohistiocytosis (HLH) secondary to infections- Experience at a tertiary care centre

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**Background**: Hemophagocytic Lymphohistiocytosis (HLH) is a rare potentially life-threatening disorder characterized by immune dysregulation, overwhelming immune activation and inflammation. This condition can occur as primary or secondary to infections, autoimmune diseases and malignancies. HLH secondary to infections is an important clinical entity especially in tropical countries. We report our experience of HLH from our hospital.

**Methods & Materials**: Materials and Methods: This is a retrospective analysis of clinical information of patients presented to our hospital between March 2012 and November 2015. All fulfilled the revised criteria of HLH 2004. 

**Results**: Total 5 cases were segregated with secondary HLH diagnosis. The mean age at diagnosis was 34 years (with a
range of 28 to 50 years). All were males. All patients presented with prolonged fever, hepatomegaly and/or splenomegaly. All of them had at least a bi- or trilineage cytopenia, elevated liver enzymes, hyperferritenemia and hypertrygliceridemia. Four out of five patients had hypofibrinogenemia and hemophagocytosis in bone marrow.

The cause of HLH in our series included scrub typhus-1, military tuberculosis-1, enteric fever-1, HIV infection-1 and septecemia-1. All of them received treatment for underlying primary infection along with supportive care. One patient received steroids for HLH. Four patients expired due to multi-organ dysfunction and one recovered.

Type: Poster Presentation

Final Abstract Number: 42.256
Session: Poster Session II
Date: Friday, March 4, 2016
Time: 12:45-14:15
Room: Hall 3 (Posters & Exhibition)

Hemophagocytic lymphohistiocytosis (HLH) secondary to tropical infections—experience at a tertiary care centre


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http://dx.doi.org/10.1016/j.ijid.2016.02.717