

**Table S1. List of phage capsid mutations observed via Whole Genome Sequencing.**

Phage name	Nucleotide location	Nucleotide mutation*	Amino acid location	Amino acid mutation
<b>PaMx41<math>\Delta</math>acb2 Escapers (ESC)</b>				
ESC 1	9371	T→C	330	S→P
ESC 2	8745	T→G	121	I→S
ESC 3	9371	T→C	330	S→P
ESC 4	9371	T→C	330	S→P
ESC 5	9363	T→C	327	I→T
ESC 6	8745	T→C	121	I→T
ESC 7	8745	T→C	121	I→T
<b>JBD67<math>\Delta</math>acb2 ESC</b>				
ESC 1	22601	T→C	263	W→R
ESC 2	22601	T→C	263	W→R
ESC 3	22601	T→C	263	W→R
ESC 4	22385	A→T	191	N→R
<b>JBD18 WT ESC</b>				
ESC 1	22559	C→T	159	A→V
ESC 2	22559	C→T	159	A→V
ESC 3	22907	A→C	275	N→T
ESC 4	22870	T→C	263	W→R

\*Mutations were recorded if the 100% of the reads detected the change in nucleotide relative to the reference genome.