

8 Appendix

8.1 Abbreviations

Table 7: List of abbreviations.

AG	Arabinogalactan	MOI	Multiplicity of infection
<i>aph</i>	Gene for aminotransferase	<i>mspA</i>	<i>Mycobacterium smegmatis</i> porin A
ATP	Adenosintriphosphate	MW	Molecular weight
att	Attachment site	NCBI	National Center for Biotechnology Information
BCG	Bacille Calmette-Guerin	NL	Non linear
bp	Basepare	nOPOE	n-octylpolyoxyethylene
CFU	Colony forming unit	nS	Nanosiemens
CTAB	Hexa-decyltrimethylammonium bromide	OD	Optical density
dH ₂ O	Distilled H ₂ O	OM	Outer embrane
DNA	Desoxiribonucleic acid	<i>ompATb</i>	Outer membrane protein A <i>Tuberculosis</i>
dNTP	Desoxiribonucleoside triphosphate	ORF	Open reading frame
ELISA	Enzyme linked immunosorbant assay	PBS	Phosphate buffered saline
EMBL	European Molecular Biology Laboratory	PCR	Polymerase chain reaction
FAM	6-Carboxyl-Flourecein	PG	Peptidoglycan
g	Acceleration of gravity	<i>porM1</i>	Porin <i>Mycobacterium 1</i>
h	Hour	RGM	Rapidly growing mycobacteria
<i>hsp60</i>	Heat shock protein 60	RLU	Relative light unit
HYG	Hygromycin	rMspA	Recombinant MspA
Ig	Immunoglobulin	RNA	Ribonucleic acid
IM	Inner membrane	ROX	6-Carboxy-X-rhodamine
<i>int</i>	Gene for integrase	rpm	Rounds per minute
Ip	Isoelectric point	rRNA	Ribosomal RNA
kDa	Kilodalton	RT	Reverse transcriptase
KM	Kanamycin	s	Second
kV	Kilovolt	SD	Standard deviation
LAM	Lipoarabinomannan	SDS	Sodium dodecyl sulfate
LB	Luria Bertani medium	TAMRA	Tetramethylrhodamine
MA	Mycolic acid	TEM	Transmission electron microscopy
Mb	Mega basepare	U	Unit
min	Minute	WHO	World Health Organization

8.2 Maps of plasmids

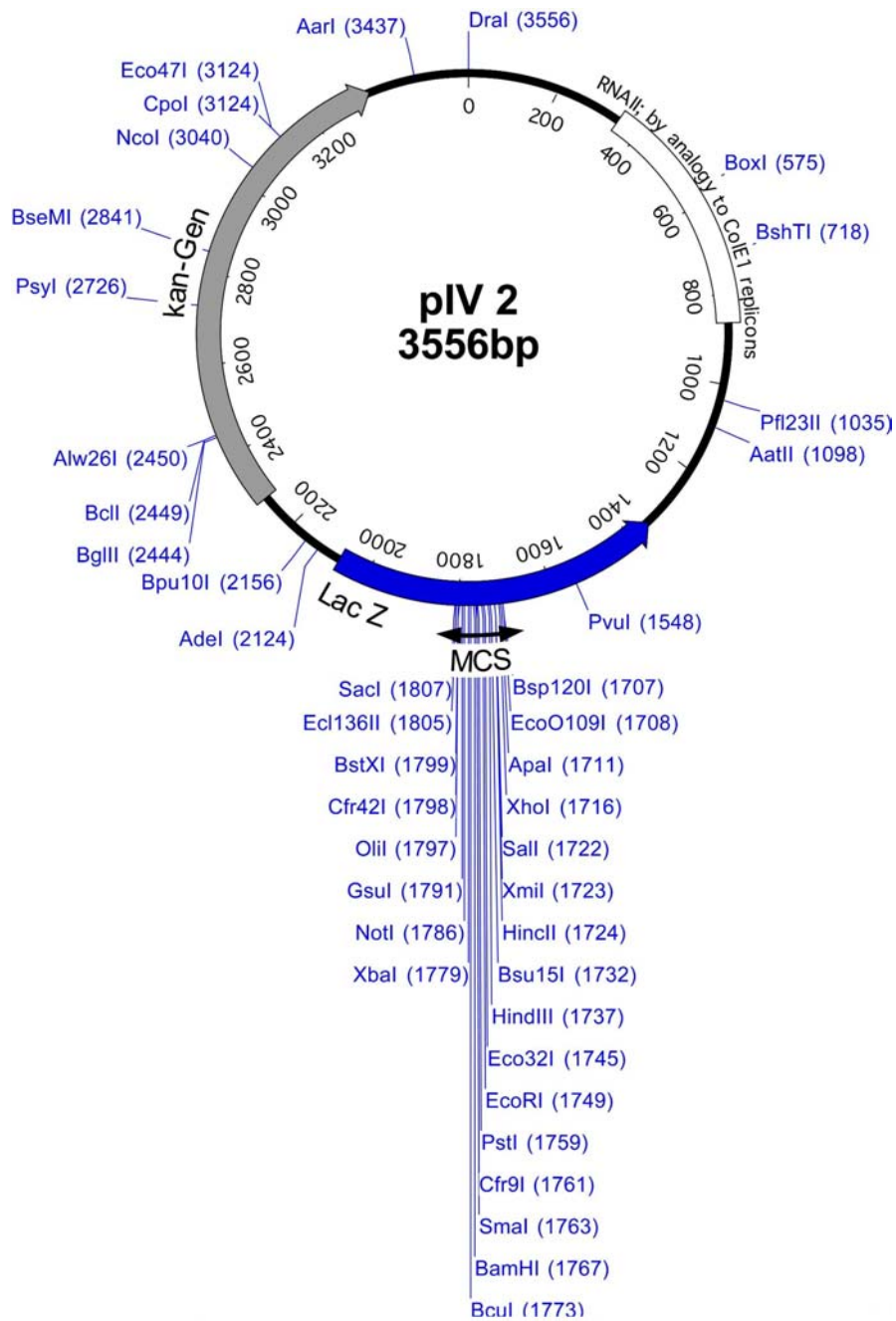


Figure 21: Cloning plasmid pIV2 (Strauch et al., 2000).

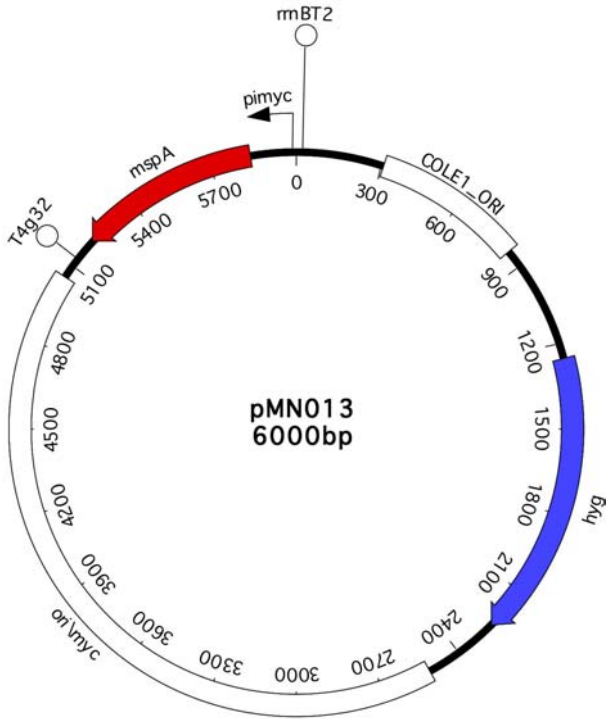


Figure 22: Plasmid pMN013 (Mailaender et al., 2004).

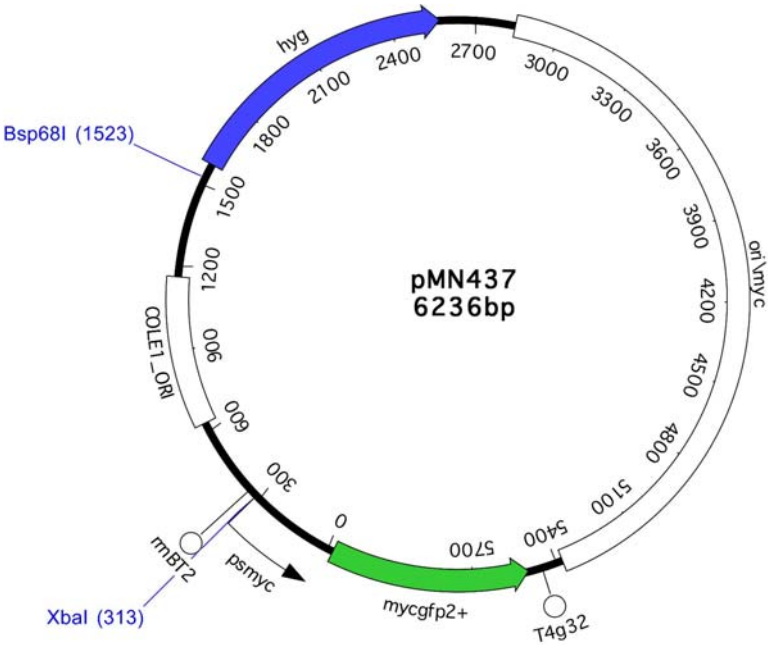


Figure 23: Plasmid pMN437 (Kaps et al., 2001).

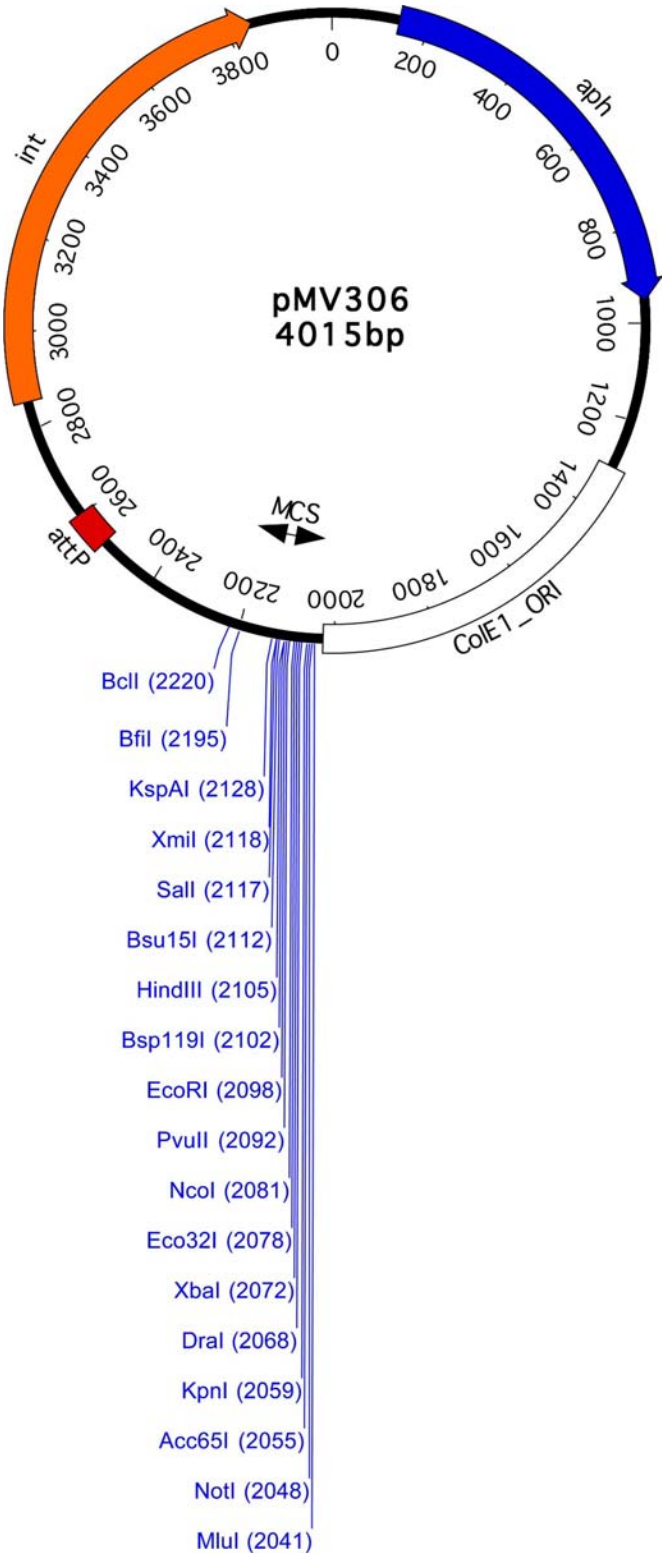


Figure 24: Cloning plasmid pMV306 (Stover et al., 1991).

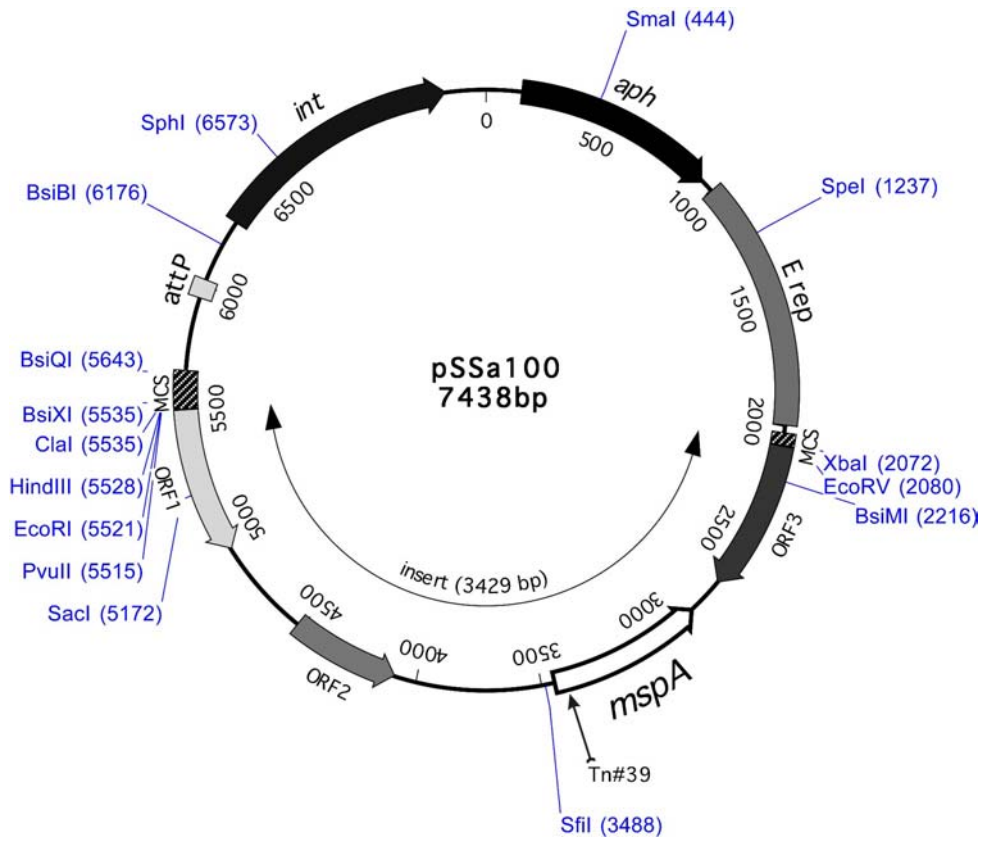


Figure 25: Plasmid pSSa100, prepared in this work (Sharbati-Tehrani et al., 2004).

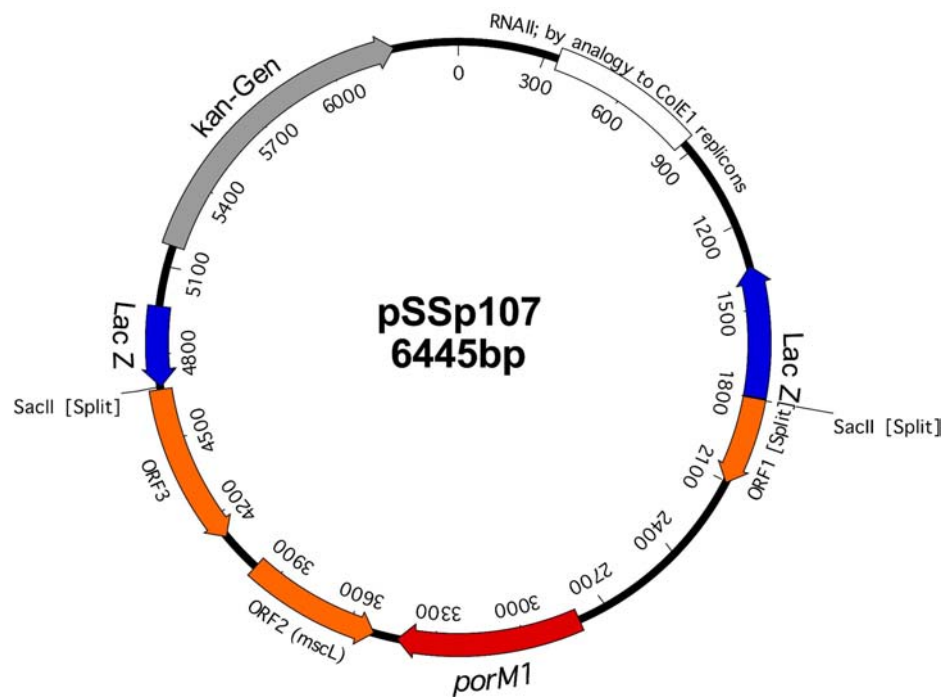


Figure 26: Plasmid pSSp107 (identical to pSSp108), prepared in this work.

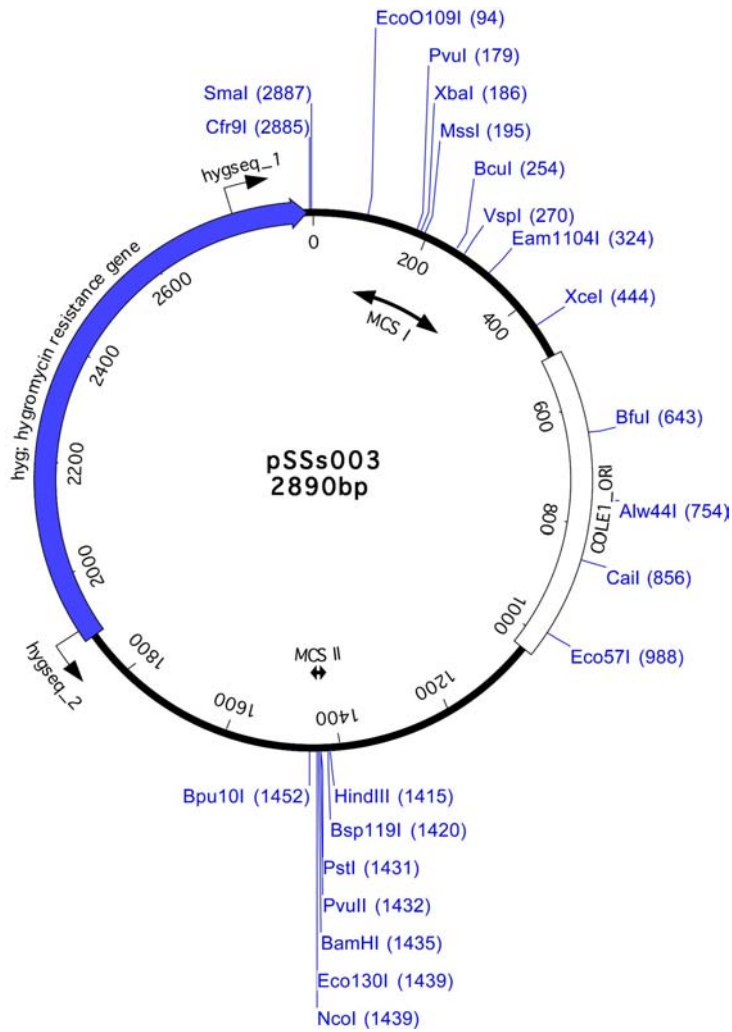


Figure 27: Mycobacterial suicide plasmid pSSs003, constructed in this work.

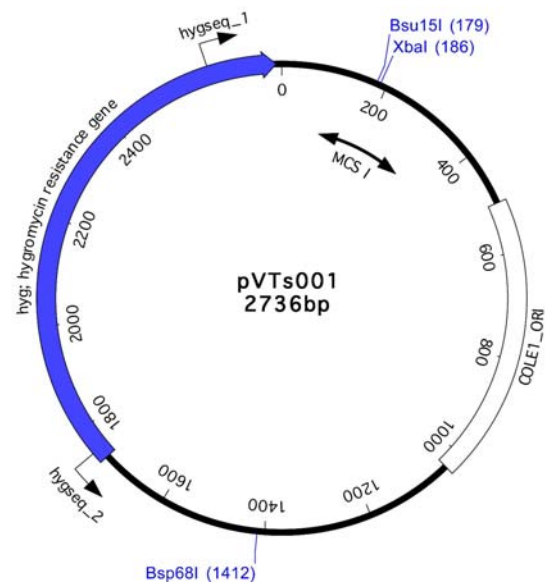


Figure 28: Precursor plasmid pVTs001, constructed in this work.

8.3 Nucleotide sequences

PorM1 sequence from *M. fortuitum* DSM 46621:

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PorM1 sequence from *M. fortuitum* 10851/03:

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PorM1 sequence from *M. fortuitum* 10860/03:

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PorM1 sequence from *M. peregrinum* 9912/03:

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PorM1 sequence from *M. peregrinum* 9926/03:

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16S rRNA sequence from *M. fortuitum* DSM 46621:

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16S rRNA sequence from *M. fortuitum* 10851/03:

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16S rRNA sequence from *M. fortuitum* 10860/03:

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16S rRNA sequence from *M. peregrinum* 9912/03:

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16S rRNA sequence from *M. peregrinum* 9926/03:

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8.4 Publications resulted from this study

8.4.1 Articles

Lewin, A., Freytag, B., Meister, B., Sharbati-Tehrani, S., Schafer, H., & Appel, B. (2003). Use of a quantitative TaqMan-PCR for the fast quantification of mycobacteria in broth culture, eukaryotic cell culture and tissue. *J. Vet. Med. B. Infect. Dis. Vet. Public Health* **50**, 505-509.

Sharbati-Tehrani, S., Meister, B., Appel, B., & Lewin, A. (2004). The porin MspA from *Mycobacterium smegmatis* improves growth of *Mycobacterium bovis* BCG. *Int. J. Med. Microbiol.* **294**, 235-245.

Sharbati-Tehrani, S., Stephan, J., Appel, B., Niederweis, M., and Lewin, A. (2005). Porins limit the intracellular persistence of *Mycobacterium smegmatis*. (submitted to *Microbiology*).

8.4.2 Presentation

Sharbati-Tehrani, S., Freytag, B., Meister, B., Martinez-Moya, M., Appel, B., and Lewin, A. (2003). Introduction of a gene from *Mycobacterium smegmatis* encoding a porin into *Mycobacterium bovis* BCG and investigation of its growth physiology. *Infection* 31 (Suppl1): 104. 7. Kongress für Infektionskrankheiten und Tropenmedizin. 27.02.-01.03.2003, Berlin.

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8.6 Erklärung

Die dieser Dissertation zugrunde liegenden Arbeiten wurden am Robert Koch-Institut, Berlin, im Zeitraum Mai 2002 bis März 2005 durchgeführt.

Hiermit erkläre ich, dass ich die vorliegende Dissertation selbständig verfasst und keine anderen als die angegebenen Hilfsmittel verwendet habe.

Berlin, 22. März 2005

Soroush Sharbati-Tehrani