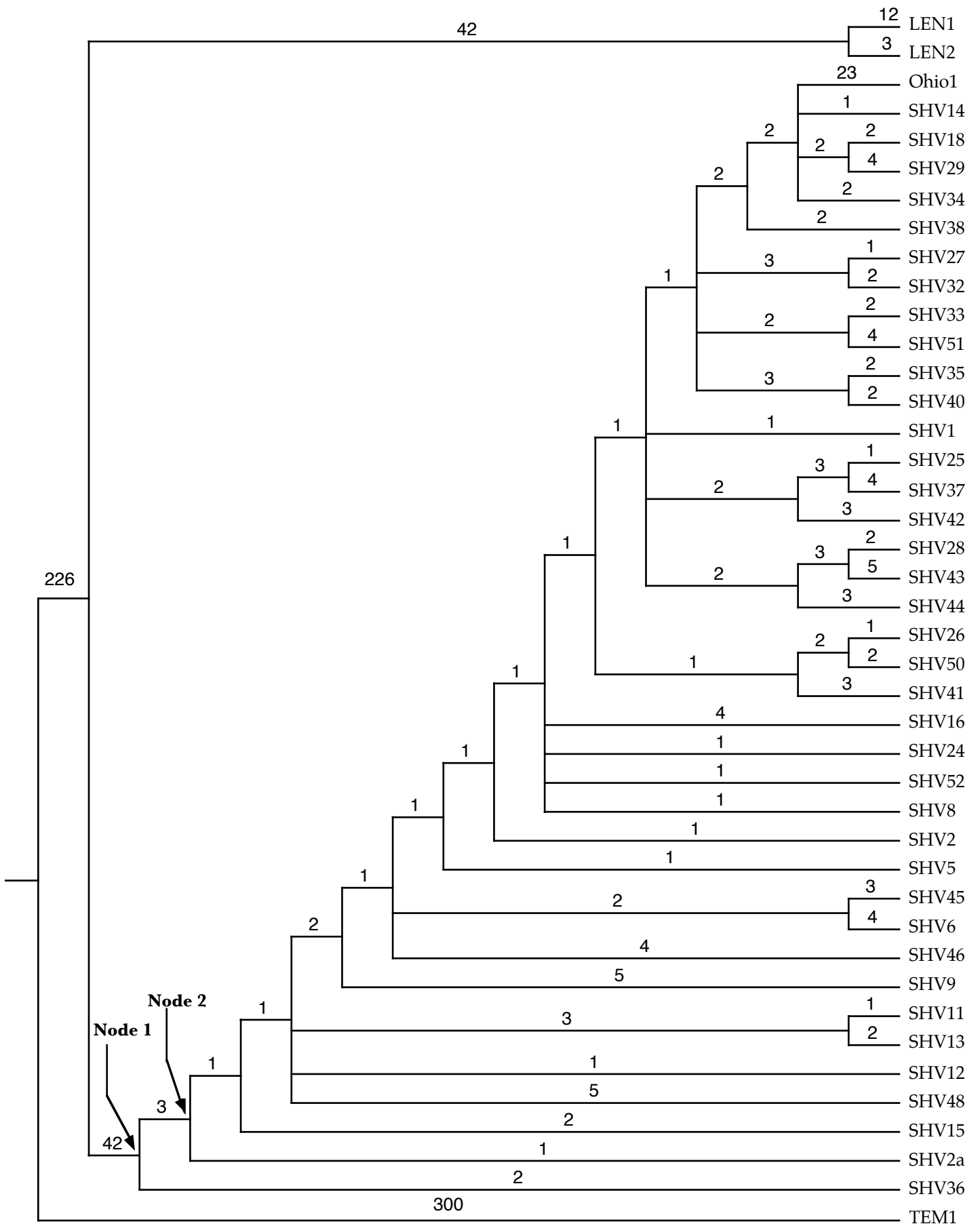


SHV Phylogeny



Branch lengths are nucleotide substitutions.

The ancestral sequence at Node 1 is estimated to be identical to that of SHV-36, and the ancestral sequence at Node 2 is estimated to be identical to that of SHV2a. Both SHV2 and SHV-36 have the ESBL (extended spectrum) phenotype, suggesting that broad-spectrum enzymes such as OHIO1, OHIO2, and SHV-1, were derived from ESBL enzymes.

Hall, B.G. and M. Barlow 2004. Evolution of the serine β -lactamases: Past, Present and Future. Drug Resistance Updates 7: 111-123.

Taxon	Organism	Gene Location	Accession Number
LEN1	<i>Klebsiella pneumoniae</i>	Chromosome	X04515
LEN2	<i>Klebsiella pneumoniae</i>	Chromosome	AY037780
Ohio1	<i>Enterobacter cloacae</i>	Plasmid	M33655
SHV1	<i>Klebsiella pneumoniae</i>	Plasmid	X98098
SHV11	<i>Shigella dysenteriae</i>	Plasmid	Y18299
SHV12	<i>Klebsiella pneumoniae</i>	Plasmid	AY008838
SHV13	<i>Klebsiella pneumoniae</i>	Plasmid	AF164577
SHV14	<i>Klebsiella pneumoniae</i>	Unknown	AF226622
SHV15	<i>Escherichia coli</i>	Plasmid	AJ011428
SHV16	<i>Klebsiella pneumoniae</i>	Chromosome	AF072684
SHV18	<i>Klebsiella pneumoniae</i>	Plasmid	AF132290
SHV2	<i>Klebsiella pneumoniae</i> subsp. <i>ozaenae</i>	Unknown	X53433
SHV24	<i>Escherichia coli</i>	Plasmid	AB023477
SHV25	<i>Klebsiella pneumoniae</i>	Unknown	AF208796
SHV26	<i>Klebsiella pneumoniae</i>	Unknown	AF227204
SHV27	<i>Klebsiella pneumoniae</i>	Unknown	AF293345
SHV28	<i>Klebsiella pneumoniae</i>	Plasmid	AF299299
SHV29	<i>Klebsiella pneumoniae</i>	Unknown	AF301532
SHV2a		Plasmid	X53817
SHV32	<i>Klebsiella pneumoniae</i>	Chromosome	AY037778
SHV33	<i>Klebsiella pneumoniae</i>	Chromosome	AY037779
SHV34	<i>Escherichia coli</i>	Plasmid	AY036620
SHV35	<i>Klebsiella pneumoniae</i>	Plasmid	AY070258
SHV36	<i>Klebsiella pneumoniae</i>	Plasmid	AF467947.1
SHV37	<i>Klebsiella pneumoniae</i>	Unknown	AF467948
SHV38	<i>Klebsiella pneumoniae</i>	Chromosome	AY079099
SHV40		Unknown	AF535128.1
SHV41	<i>Klebsiella pneumoniae</i>	Unknown	AF535129
SHV42	<i>Klebsiella pneumoniae</i>	Unknown	AF535130
SHV43	<i>Klebsiella pneumoniae</i>	Unknown	AY065991
SHV44	<i>Klebsiella pneumoniae</i>	Chromosome	AY259119
SHV45	<i>Klebsiella pneumoniae</i>	Unknown	AF547625
SHV46	<i>Klebsiella oxytoca</i>	Plasmid	AY210887
SHV48	<i>Acinetobacter baumannii</i>	Plasmid	AY259164
SHV5	<i>Klebsiella pneumoniae</i>	Plasmid	X55640
SHV50	<i>Klebsiella pneumoniae</i>	Chromosome	AY288915
SHV51	<i>Klebsiella pneumoniae</i>	Chromosome	AY289548

SHV52	Escherichia coli	Plasmid	AY223863
SHV6	Escherichia coli	Plasmid	U20270
SHV8	Escherichia coli	Chromosome	U92041
SHV9	Klebsiella pneumoniae	Plasmid	S82452
TEM1		Plasmid	AF309824