

**Table S1:** List of rodent species captured from the three habitat areas.

<b>Sample ID</b>	<b>Collection Date</b>	<b>Sampling Locality</b>	<b>Morphological Identification</b>
R1	2015/09/07	Tlhavekisa	<i>Mastomys</i> sp.
R2	2015/09/07	Tlhavekisa	<i>Mastomys coucha</i>
R3	2015/09/07	Tlhavekisa	<i>Mastomys</i> sp.
R4	2015/09/07	Tlhavekisa	<i>Mastomys</i> sp.
R5	2015/09/07	Tlhavekisa	<i>Mastomys coucha</i>
R6	2015/09/07	Tlhavekisa	<i>Mastomys coucha</i>
R7	2015/09/07	Tlhavekisa	<i>Gerbilliscus leucogaster</i>
R8	2015/09/07	Tlhavekisa	<i>Saccostomus campestris</i>
R9	2015/09/08	Tlhavekisa	<i>Mastomys</i> sp.
R10	2015/09/08	Tlhavekisa	<i>Mastomys</i> sp.
R11	2015/09/08	Tlhavekisa	<i>Mastomys coucha</i>
R12	2015/09/08	Tlhavekisa	<i>Mastomys coucha</i>
R13	2015/09/08	Manyeleti	<i>Gerbilliscus leucogaster</i>
R14	2015/09/08	Manyeleti	<i>Gerbilliscus leucogaster</i>
R15	2015/09/08	Manyeleti	<i>Gerbilliscus leucogaster</i>
R16	2015/09/08	Manyeleti	<i>Mastomys</i> sp.
R17	2015/09/09	Tlhavekisa	<i>Gerbilliscus leucogaster</i>
R18	2015/09/09	Gottenburg	<i>Mastomys</i> sp.
R19	2015/09/09	Gottenburg	<i>Mastomys natalensis</i>
R20	2015/09/09	Gottenburg	<i>Mastomys natalensis</i>
R21	2015/09/09	Manyeleti	<i>Mastomys coucha</i>
R22	2015/09/09	Manyeleti	<i>Saccostomus campestris</i>
R23	2015/09/09	Manyeleti	<i>Aethomys</i> sp.
R24	2015/09/09	Manyeleti	<i>Aethomys</i> sp.
R25	2015/09/09	Manyeleti	<i>Gerbilliscus leucogaster</i>
R26	2015/09/09	Manyeleti	<i>Mastomys</i> sp.
R27	2015/09/09	Manyeleti	<i>Aethomys</i> sp.
R28	2015/09/09	Manyeleti	<i>Gerbilliscus leucogaster</i>
R29	2015/09/10	Gottenburg	<i>Mastomys natalensis</i>
R30	2015/09/10	Gottenburg	<i>Mastomys natalensis</i>
R31	2015/09/10	Gottenburg	<i>Mastomys natalensis</i>
R32	2015/09/10	Gottenburg	<i>Lemniscomys rosalia</i>
R33	2015/09/10	Hlalakahle	<i>Saccostomus campestris</i>
R34	2015/09/10	Gottenburg	<i>Mastomys</i> sp.
R35	2015/09/10	Hlalakahle	<i>Saccostomus campestris</i>
R36	2015/09/10	Hlalakahle	<i>Gerbilliscus leucogaster</i>
R37	2015/09/10	Gottenburg	<i>Mastomys</i> sp.
R38	2015/09/10	Gottenburg	<i>Mastomys</i> sp.
R39	2015/09/10	Gottenburg	<i>Rattus</i> sp.
R40	2015/09/10	Gottenburg	<i>Mastomys</i> sp.

R41	2015/09/10	Gottenburg	<i>Lemniscomys rosalia</i>
R42	2015/09/10	Gottenburg	<i>Mastomys</i> sp.
R43	2015/09/10	Gottenburg	<i>Mastomys</i> sp.
R44	2015/09/10	Gottenburg	<i>Gerbilliscus leucogaster</i>
R45	2015/09/10	Gottenburg	<i>Mastomys</i> sp.
R46	2015/09/10	Gottenburg	<i>Mastomys</i> sp.
R47	2015/09/10	Gottenburg	<i>Mastomys</i> sp.
R48	2015/09/11	Manyeleti	<i>Saccostomus campestris</i>
R49	2015/09/11	Manyeleti	<i>Aethomys</i> sp.
R50	2015/09/11	Manyeleti	<i>Mastomys</i> sp.
R51	2015/09/11	Manyeleti	<i>Gerbilliscus leucogaster</i>
R52	2015/09/12	Manyeleti	<i>Saccostomus campestris</i>
R53	2015/09/12	Manyeleti	<i>Mastomys coucha</i>
R54	2015/09/12	Manyeleti	<i>Saccostomus campestris</i>
R55	2015/09/12	Manyeleti	<i>Saccostomus campestris</i>
R56	2015/09/12	Manyeleti	<i>Steatomys</i> sp.
R57	2015/09/12	Manyeleti	<i>Aethomys</i> sp.
R58	2015/09/12	Manyeleti	<i>Mus minutoides</i>
R59	2015/09/12	Manyeleti	<i>Gerbilliscus leucogaster</i>
R60	2015/09/12	Manyeleti	<i>Gerbilliscus leucogaster</i>
R61	2015/09/12	Manyeleti	<i>Mastomys coucha</i>
R62	2015/09/12	Manyeleti	<i>Steatomys</i> sp.
R63	2015/09/12	Hlalakahle	<i>Gerbilliscus leucogaster</i>
R64	2015/09/12	Hlalakahle	<i>Mus minutoides</i>
R65	2015/09/12	Hlalakahle	<i>Gerbilliscus leucogaster</i>
R66	2015/09/12	Hlalakahle	<i>Saccostomus campestris</i>
R67	2015/09/16	Gottenburg	<i>Mastomys</i> sp.
R68	2015/09/16	Gottenburg	<i>Mastomys</i> sp.
R69	2015/09/16	Gottenburg	<i>Aethomys</i> sp.
R70	2015/09/16	Gottenburg	<i>Mastomys</i> sp.
R71	2015/09/16	Hlalakahle	<i>Mastomys</i> sp.
R72	2015/09/16	Hlalakahle	<i>Mastomys</i> sp.
R73	2015/09/16	Hlalakahle	<i>Mastomys</i> sp.
R74	2015/09/16	Hlalakahle	<i>Mastomys natalensis</i>
R75	2015/09/16	Hlalakahle	<i>Mastomys natalensis</i>
R76	2015/09/16	Hlalakahle	<i>Aethomys</i> sp.
R77	2015/09/16	Hlalakahle	<i>Mastomys</i> sp.
R78	2015/09/16	Hlalakahle	<i>Mastomys natalensis</i>
R79	2015/09/16	Hlalakahle	<i>Mastomys</i> sp.
R80	2015/09/16	Hlalakahle	<i>Mastomys</i> sp.
R81	2015/09/16	Hlalakahle	<i>Mastomys</i> sp.
R82	2015/09/16	Hlalakahle	<i>Mastomys</i> sp.
R83	2015/09/14	Tlhavekisa	<i>Mastomys</i> sp.
R84	2015/09/14	Tlhavekisa	<i>Mastomys natalensis</i>

R85	2015/09/14	Tlhavekisa	<i>Rattus</i> sp.
R86	2015/09/14	Tlhavekisa	<i>Mastomys</i> sp.
R87	2015/09/16	Tlhavekisa	<i>Rattus</i> sp.
R88	2015/09/16	Tlhavekisa	<i>Mastomys</i> sp.
R89	2015/09/16	Tlhavekisa	<i>Rattus</i> sp.
R90	2015/09/16	Tlhavekisa	<i>Rattus</i> sp.
R91	2015/09/16	Gottenburg	<i>Mastomys</i> sp.
R92	2015/09/16	Gottenburg	<i>Mastomys</i> sp.
R93	2015/09/17	Tlhavekisa	<i>Rattus</i> sp.
R94	2015/09/17	Tlhavekisa	<i>Mastomys</i> sp.
R95	2015/09/17	Hlalakahle	<i>Mastomys natalensis</i>
R96	2015/09/17	Hlalakahle	<i>Mastomys</i> sp.
R97	2015/09/17	Hlalakahle	<i>Mastomys</i> sp.
R98	2015/09/17	Hlalakahle	<i>Mastomys natalensis</i>
R99	2015/09/17	Hlalakahle	<i>Mastomys natalensis</i>
R100	2015/09/17	Hlalakahle	<i>Mastomys</i> sp.
R101	2015/09/17	Hlalakahle	<i>Mastomys</i> sp.
R102	2015/04/01	Tlhavekisa	<i>Rattus tanezumi</i>
R103	2015/04/01	Tlhavekisa	<i>Mastomys natalensis</i>
R104	2015/01/04	Tlhavekisa	<i>Mastomys natalensis</i>
R105	2015/01/04	Tlhavekisa	<i>Mastomys natalensis</i>
R106	2015/01/04	Tlhavekisa	<i>Rattus rattus</i>
R107	2015/01/04	Tlhavekisa	<i>Rattus rattus</i>
R108	2015/01/04	Tlhavekisa	<i>Rattus rattus</i>
R109	2015/01/04	Tlhavekisa	<i>Rattus rattus</i>
R110	2015/01/04	Hlalakahle	<i>Rattus tanezumi</i>
R111	2015/01/04	Hlalakahle	<i>Mastomys</i> sp.
R112	2015/01/04	Hlalakahle	<i>Saccostomus campestris</i>
R113	2015/01/04	Hlalakahle	<i>Rattus tanezumi</i>
R114	2015/01/04	Tlhavekisa	<i>Mastomys</i> sp.
R115	2015/01/04	Tlhavekisa	<i>Mastomys</i> sp.
R116	2015/01/04	Hlalakahle	<i>Aethomys</i> sp.
R117	2015/01/04	Hlalakahle	<i>Gerbilliscus leucogaster</i>
R118	2015/01/04	Hlalakahle	<i>Saccostomus campestris</i>
R119	2015/01/04	Hlalakahle	<i>Mastomys</i> sp.
R120	2015/01/04	Hlalakahle	<i>Saccostomus campestris</i>
R121	2015/01/04	Hlalakahle	<i>Gerbilliscus leucogaster</i>
R122	2015/01/04	Hlalakahle	<i>Aethomys</i> sp.
R123	2015/01/04	Hlalakahle	<i>Saccostomus campestris</i>
R124	2015/01/04	Hlalakahle	<i>Saccostomus campestris</i>
R125	2015/01/04	Hlalakahle	<i>Gerbilliscus leucogaster</i>
R126	2015/01/04	Hlalakahle	<i>Gerbilliscus leucogaster</i>
R127	2015/01/04	Hlalakahle	<i>Saccostomus campestris</i>
R128	2015/01/04	Hlalakahle	<i>Gerbilliscus leucogaster</i>

R129	2015/01/04	Hlalakahle	<i>Gerbilliscus leucogaster</i>
R130	2015/01/04	Hlalakahle	<i>Gerbilliscus leucogaster</i>
R131	2015/01/04	Hlalakahle	<i>Saccostomus campestris</i>
R132	2015/01/04	Gottenburg	<i>Saccostomus campestris</i>
R133	2015/01/04	Gottenberg	<i>Saccostomus campestris</i>
R134	2015/01/04	Gottenberg	<i>Aethomys</i> sp.
R135	2015/01/04	Gottenberg	<i>Aethomys</i> sp.
R136	2015/01/04	Hlalakahle	<i>Gerbilliscus leucogaster</i>
R137	2015/01/04	Hlalakahle	<i>Saccostomus campestris</i>
R138	2015/01/04	Hlalakahle	<i>Gerbilliscus leucogaster</i>
R139	2015/01/04	Hlalakahle	<i>Gerbilliscus leucogaster</i>
R140	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R141	2015/01/04	Gottenburg	<i>Aethomys</i> sp.
R142	2015/01/04	Gottenburg	<i>Aethomys</i> sp.
R143	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R144	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R145	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R146	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R147	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R148	2015/01/04	Manyeleti	<i>Aethomys</i> sp.
R149	2015/01/04	Manyeleti	<i>Saccostomus campestris</i>
R150	2015/01/04	Manyeleti	<i>Gerbilliscus leucogaster</i>
R151	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R152	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R153	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R154	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R155	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R156	2015/01/04	Manyeleti	<i>Gerbilliscus leucogaster</i>
R157	2015/01/04	Manyeleti	<i>Saccostomus campestris</i>
R158	2015/01/04	Manyeleti	<i>Saccostomus campestris</i>
R159	2015/01/04	Manyeleti	<i>Mastomys coucha</i>
R160	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R161	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R162	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R163	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R164	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R165	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R166	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R167	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R168	2015/01/04	Gottenburg	<i>Rattus rattus</i>
R169	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R170	2015/01/04	Gottenburg	<i>Rattus rattus</i>
R171	2015/01/04	Gottenburg	<i>Mastomys natalensis</i>
R172	2015/01/04	Gottenburg	<i>Mastomys natalensis</i>

R173	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R174	2015/01/04	Gottenburg	<i>Rattus rattus</i>
R175	2015/01/04	Gottenburg	<i>Mastomys</i> sp.
R176	2015/01/04	Manyeleti	<i>Gerbilliscus leucogaster</i>
R177	2015/01/04	Manyeleti	<i>Mastomys coucha</i>
R178	2015/01/04	Manyeleti	<i>Gerbilliscus leucogaster</i>
R179	2015/01/04	Manyeleti	<i>Mastomys coucha</i>
R180	2015/01/04	Manyeleti	<i>Mastomys</i> sp.
R181	2015/01/04	Manyeleti	<i>Steatomys</i> sp.
R182	2015/01/04	Manyeleti	<i>Mastomys</i> sp.
R183	2015/01/04	Manyeleti	<i>Gerbilliscus leucogaster</i>
R184	2015/01/04	Manyeleti	<i>Gerbilliscus leucogaster</i>
R185	2014/07/29	Manyeleti	<i>Mastomys</i> sp.
R186	2014/07/29	Manyeleti	<i>Mastomys</i> sp.
R187	2014/07/29	Manyeleti	<i>Gerbilliscus leucogaster</i>
R188	2014/07/29	Manyeleti	<i>Mastomys</i> sp.
R189	2014/07/29	Manyeleti	<i>Mastomys</i> sp.
R190	2014/07/29	Manyeleti	<i>Mastomys</i> sp.
R191	2014/07/29	Manyeleti	<i>Gerbilliscus leucogaster</i>
R192	2014/07/29	Manyeleti	<i>Gerbilliscus leucogaster</i>
R193	2014/07/29	Manyeleti	<i>Mastomys</i> sp.
R194	2014/07/29	Manyeleti	<i>Mastomys</i> sp.
R195	2014/07/29	Manyeleti	<i>Mastomys</i> sp.
R196	2014/07/29	Manyeleti	<i>Mastomys</i> sp.
R197	2014/07/29	Manyeleti	<i>Mastomys</i> sp.
R198	2014/07/29	Manyeleti	<i>Gerbilliscus leucogaster</i>
R199	2014/07/29	Manyeleti	<i>Gerbilliscus leucogaster</i>
R200	2014/07/29	Manyeleti	<i>Gerbilliscus leucogaster</i>
R201	2014/07/31	Manyeleti	<i>Gerbilliscus leucogaster</i>
R202	2014/07/31	Manyeleti	<i>Gerbilliscus leucogaster</i>
R203	2014/07/31	Manyeleti	<i>Gerbilliscus leucogaster</i>
R204	2014/07/31	Manyeleti	<i>Gerbilliscus leucogaster</i>
R205	2014/07/30	Manyeleti	<i>Aethomys chrysophilus</i>
R206	2014/07/30	Manyeleti	<i>Aethomys chrysophilus</i>
R207	2014/07/30	Manyeleti	<i>Gerbilliscus leucogaster</i>
R208	2014/07/30	Manyeleti	<i>Aethomys chrysophilus</i>
R209	2014/07/30	Manyeleti	<i>Aethomys chrysophilus</i>
R210	2014/07/30	Manyeleti	<i>Gerbilliscus leucogaster</i>
R211	2014/07/30	Manyeleti	<i>Gerbilliscus leucogaster</i>
R212	2014/08/01	Manyeleti	<i>Lemniscomys rosalis</i>
R213	2014/08/01	Manyeleti	<i>Gerbilliscus leucogaster</i>
R214	2014/08/01	Manyeleti	<i>Gerbilliscus leucogaster</i>
R215	2014/08/02	Manyeleti	<i>Mus musculus</i>
R216	2014/08/02	Manyeleti	<i>Mus musculus</i>

R217	2014/07/29	Hluvukani	<i>Mus musculus</i>
R218	2014/07/29	Hluvukani	<i>Gerbilliscus leucogaster</i>
R219	2014/07/29	Hluvukani	<i>Gerbilliscus leucogaster</i>
R220	2014/07/29	Manyeleti	<i>Aethomys chrysophilus</i>
R221	2014/07/31	Manyeleti	<i>Aethomys chrysophilus</i>
R222	2014/07/31	Gottenburg	<i>Aethomys chrysophilus</i>
R223	2014/07/31	Gottenburg	<i>Mastomys</i> sp.
R224	2014/08/03	Tlhavakisa	<i>Mus musculus</i>
R225	2014/07/29	Manyeleti	<i>Mus musculus</i>
R226	2014/07/29	Hluvukani	<i>Aethomys chrysophilus</i>
R227	2014/07/29	Hluvukani	<i>Aethomys chrysophilus</i>
R228	2014/07/30	Gottenburg	<i>Rattus rattus</i>
R229	2014/07/30	Gottenburg	<i>Aethomys chrysophilus</i>
R230	2014/07/30	Gottenburg	<i>Aethomys chrysophilus</i>
R231	2014/07/30	Gottenburg	<i>Rattus rattus</i>
R232	2014/07/31	Gottenburg	<i>Aethomys chrysophilus</i>
R233	2014/07/31	Gottenburg	<i>Aethomys chrysophilus</i>
R234	2014/07/31	Gottenburg	<i>Aethomys chrysophilus</i>
R235	2014/07/31	Gottenburg	<i>Aethomys chrysophilus</i>
R236	2014/07/31	Gottenburg	<i>Aethomys chrysophilus</i>
R237	2014/07/31	Gottenburg	<i>Rattus rattus</i>
R238	2014/07/31	Gottenburg	<i>Aethomys chrysophilus</i>
R239	2014/07/31	Gottenburg	<i>Aethomys chrysophilus</i>
R240	2014/07/31	Gottenburg	<i>Aethomys chrysophilus</i>
R241	2014/07/31	Gottenburg	<i>Aethomys chrysophilus</i>
R242	2014/07/31	Gottenburg	<i>Aethomys chrysophilus</i>
R243	2014/07/30	Gottenburg	<i>Aethomys chrysophilus</i>
R244	2014/07/30	Gottenburg	<i>Aethomys chrysophilus</i>
R245	2014/07/30	Gottenburg	<i>Rattus rattus</i>
R246	2014/07/30	Gottenburg	<i>Aethomys chrysophilus</i>
R247	2014/07/30	Gottenburg	<i>Rattus rattus</i>
R248	2014/07/30	Gottenburg	<i>Aethomys chrysophilus</i>
R249	2014/08/01	Gottenburg	<i>Aethomys chrysophilus</i>
R250	2014/08/01	Gottenburg	<i>Aethomys chrysophilus</i>
R251	2014/08/01	Gottenburg	<i>Aethomys chrysophilus</i>
R252	2014/08/01	Gottenburg	<i>Aethomys chrysophilus</i>
R253	2014/08/01	Gottenburg	<i>Aethomys chrysophilus</i>
R254	2014/08/01	Gottenburg	<i>Aethomys chrysophilus</i>
R255	2014/08/01	Gottenburg	<i>Rattus rattus</i>
R256	2014/08/01	Gottenburg	<i>Aethomys chrysophilus</i>
R257	2014/08/01	Gottenburg	<i>Aethomys chrysophilus</i>
R258	2014/08/01	Gottenburg	<i>Aethomys chrysophilus</i>
R259	2014/08/02	Gottenburg	<i>Aethomys chrysophilus</i>
R260	2014/08/02	Gottenburg	<i>Aethomys chrysophilus</i>

R261	2014/08/02	Gottenburg	<i>Aethomys chrysophilus</i>
R262	2014/08/02	Gottenburg	<i>Rattus rattus</i>
R263	2014/08/03	Gottenburg	<i>Aethomys chrysophilus</i>
R264	2014/08/03	Gottenburg	<i>Aethomys chrysophilus</i>
R265	2014/08/03	Gottenburg	<i>Aethomys chrysophilus</i>
R266	2014/08/03	Gottenburg	<i>Aethomys chrysophilus</i>
R267	2014/08/03	Gottenburg	<i>Rattus rattus</i>
R268	2014/08/04	Gottenburg	<i>Rattus rattus</i>
R269	2014/08/04	Gottenburg	<i>Rattus rattus</i>
R270	2014/08/04	Gottenburg	<i>Aethomys chrysophilus</i>
R271	2014/08/06	Hlalakahle	<i>Aethomys chrysophilus</i>
R272	2014/08/06	Hlalakahle	<i>Aethomys chrysophilus</i>
R273	2014/08/06	Hlalakahle	<i>Aethomys chrysophilus</i>
R274	2014/08/06	Hlalakahle	<i>Aethomys chrysophilus</i>
R275	2014/08/06	Hlalakahle	<i>Aethomys chrysophilus</i>
R276	2014/08/06	Hlalakahle	<i>Aethomys chrysophilus</i>
R277	2014/08/06	Hlalakahle	<i>Rattus rattus</i>
R278	2014/08/06	Hlalakahle	<i>Aethomys chrysophilus</i>
R279	2014/08/07	Hlalakahle	<i>Aethomys chrysophilus</i>
R280	2014/08/07	Hlalakahle	<i>Aethomys chrysophilus</i>
R281	2014/08/07	Hlalakahle	<i>Aethomys chrysophilus</i>
R282	2014/08/07	Hlalakahle	<i>Aethomys chrysophilus</i>

**Table S2:** Origin and list of samples on which circular consensus sequencing (CCS) and multilocus gene sequencing were performed.

Sample ID	Origin	Host Species	<i>Msp2</i> gene qPCR Positive	Sequencing	
				CCS	Targeted
C5	Hlalakahle	Cattle	+	Yes	No
C10	Tlhavekisa	Cattle	+	Yes	No
C13	Seville A	Cattle	+	Yes	No
C17	Hlalakahle	Cattle	+	Yes	No
C38	Tlhavekisa	Cattle	+	Yes	No
C42	Seville B	Cattle	+	Yes	Yes
C47	Hlalakahle	Cattle	+	Yes	No
C91	Seville A	Cattle	+	Yes	No
C96	Gottenburg	Cattle	+	Yes	No
D2	Hluvukani	Dog	+	Yes	Yes
D3	Hluvukani	Dog	+	No	Yes
D5	Hluvukani	Dog	+	No	Yes
D6	Hluvukani	Dog	+	Yes	No
D9	Hluvukani	Dog	+	No	Yes
D13	Hluvukani	Dog	+	Yes	No
D14	Hluvukani	Dog	+	Yes	No
D21	Hluvukani	Dog	+	Yes	No
D24	Hluvukani	Dog	+	Yes	Yes
D25	Hluvukani	Dog	+	Yes	Yes
D26	Hluvukani	Dog	+	Yes	No
D27	Hluvukani	Dog	+	No	Yes
D28	Hluvukani	Dog	+	Yes	Yes
D33	Hluvukani	Dog	+	No	Yes
D36	Hluvukani	Dog	+	Yes	Yes
D37	Hluvukani	Dog	+	No	Yes
H1	Utha	Human	-	Yes	No
H4	Welverdiend	Human	-	Yes	No
H8	Gottenburg	Human	+	Yes	No
H18	Welverdiend	Human	+	Yes	No
H27	Welverdiend	Human	+	Yes	Yes
H47	Welverdiend	Human	+	Yes	Yes
H53	Utha	Human	+	Yes	Yes
H59	Utha	Human	+	Yes	Yes
H69	Utha	Human	+	Yes	No
R2	Tlhavekisa	<i>Mastomys coucha</i>	-	Yes	No
R5	Tlhavekisa	<i>Mastomys coucha</i>	-	Yes	No
R6	Tlhavekisa	<i>Mastomys coucha</i>	-	Yes	No
R11	Tlhavekisa	<i>Mastomys coucha</i>	-	Yes	No
R12	Tlhavekisa	<i>Mastomys coucha</i>	-	Yes	No
R19	Gottenburg	<i>Mastomys natalensis</i>	-	Yes	No
R20	Gottenburg	<i>Mastomys natalensis</i>	-	Yes	No
R21	Manyeleti	<i>Mastomys coucha</i>	-	Yes	No
R29	Gottenburg	<i>Mastomys natalensis</i>	-	Yes	No
R30	Gottenburg	<i>Mastomys natalensis</i>	-	Yes	No
R31	Gottenburg	<i>Mastomys natalensis</i>	-	Yes	No
R53	Manyeleti	<i>Mastomys coucha</i>	-	Yes	No
R61	Manyeleti	<i>Mastomys coucha</i>	-	Yes	No
R74	Hlalakahle	<i>Mastomys natalensis</i>	-	Yes	No
R75	Hlalakahle	<i>Mastomys natalensis</i>	+	Yes	No
R78	Hlalakahle	<i>Mastomys natalensis</i>	+	Yes	No
R84	Tlhavekisa	<i>Mastomys natalensis</i>	+	Yes	No
R95	Hlalakahle	<i>Mastomys natalensis</i>	+	Yes	No
R98	Hlalakahle	<i>Mastomys natalensis</i>	+	Yes	No
R99	Hlalakahle	<i>Mastomys natalensis</i>	+	Yes	No
R102	Tlhavekisa	<i>Rattus tanezumi</i>	+	No	Yes



<b>R103</b>	Tlhavekisa	<i>Mastomys natalensis</i>	+	No	Yes
<b>R104</b>	Tlhavekisa	<i>Mastomys natalensis</i>	+	No	Yes
<b>R105</b>	Tlhavekisa	<i>Mastomys natalensis</i>	+	No	Yes
<b>R124</b>	Hlalakahle	<i>Saccostomus campestris</i>	+	No	Yes
<b>R125</b>	Hlalakahle	<i>Gerbilliscus leucogaster</i>	+	No	Yes
<b>R138</b>	Hlalakahle	<i>Gerbilliscus leucogaster</i>	+	No	Yes
<b>R159</b>	Manyeleti	<i>Mastomys coucha</i>	+	Yes	No
<b>R171</b>	Gottenburg	<i>Mastomys natalensis</i>	+	Yes	No
<b>R172</b>	Gottenburg	<i>Mastomys natalensis</i>	+	Yes	No
<b>R177</b>	Manyeleti	<i>Mastomys coucha</i>	+	Yes	No
<b>R179</b>	Manyeleti	<i>Mastomys coucha</i>	+	Yes	No
<b>RA1</b>	Athol	<i>Rhipicephalus sanguineus</i>	+	No	Yes
<b>RA3</b>	Athol	<i>Rhipicephalus sanguineus</i>	+	No	Yes
<b>RH1</b>	Hluvukani	<i>Rhipicephalus sanguineus</i>	+	No	Yes
<b>RH3</b>	Hluvukani	<i>Rhipicephalus sanguineus</i>	+	No	Yes
<b>RH8</b>	Hluvukani	<i>Rhipicephalus sanguineus</i>	+	No	Yes

+ Positive on qPCR assay

- Negative on qPCR assay

**Table S3:** Genbank accession numbers of sequences used in the phylogenetic analysis of the *Anaplasma* species.

Accession number	Organism	Strain/	Host
16S rRNA			
U02521	<i>A. phagocytophilum</i>	Webster/US	Human
NC007797	<i>A. phagocytophilum</i>	HZ/US	Human
CP006618	<i>A. phagocytophilum</i>	Dog2/US	Dog
AF093789	HGE agent	US	Human
CP046391	<i>A. platys</i> strain S3	Saint Kitts	Dog
M82801	<i>A. platys</i>	US	Dog
KT982643	<i>A. platys</i>	India	Dog
LC269822	<i>A. platys</i>	Zambia	Dog
AY570540	<i>Anaplasma</i> sp. South Africa dog 1245	South Africa	Dog
AY570539	<i>Anaplasma</i> sp. South Africa dog 1076	South Africa	Dog
LC269823	<i>Anaplasma</i> sp. ZAM dog	Zambia	Dog
MT918373	<i>Anaplasma</i> sp. Southern Africa dog	South Africa	Black-backed jackal
MT918374	<i>Anaplasma</i> sp. Southern Africa dog	South Africa	Black-backed jackal
KU586025	<i>Candidatus Anaplasma</i> boleense	WHANSP/China	<i>Anopheles sinensis</i>
KU586169	<i>Candidatus Anaplasma</i> boleense	WHANSA China	<i>Anopheles sinensis</i>
MF576175	<i>Anaplasma</i> sp. Mymensingh	Bangladesh	Cattle
KY924886	Uncultured <i>Anaplasma</i> sp. Dedessa	Ethiopia	Cattle
KJ410249	<i>Anaplasma</i> sp. BL102-7	China	<i>Hyalomma asiaticum</i>
KP006405	Uncultured <i>Anaplasma</i> sp. Dog9	Philippines	Dog
U03775	<i>A. bovis</i>	South Africa	Cattle
AF309869	<i>A. centrale</i>	Strain Isreal	Cattle
AY048816	<i>A. marginale</i>	St. Maries	Cattle
AF414870	<i>A. ovis</i>	South Africa	Sheep
U54806	<i>Anaplasma</i> sp. Omatjenne	Namibia	<i>Hyalomma truncatum</i>
KP314237	<i>A. capra</i>	China	Tick
U11021	<i>Rickettsia rickettsii</i>	Sawtooth/US	<i>Dermacentor andersoni</i>
<i>gltA</i> gene			
AF304140	<i>A. marginale</i>	Florida/US	Cattle
KJ410283	<i>A. ovis</i>	China	Tick
CP001759	<i>A. centrale</i>	Isreal	Cattle
KU586317	<i>A. bovis</i>	China	<i>Aedes albopictus</i>
AQW38804	<i>A. bovis</i>	China	<i>Aedes albopictus</i>
AF304137	<i>A. phagocytophilum</i>	California/US	Horse
CP015376	<i>A. phagocytophilum</i>	Norway variant2/ Norway	Sheep
AGR81592	<i>A. phagocytophilum</i>	Dog2/US	Dog
SCV65315	<i>A. phagocytophilum</i>	France	Genome Assembly
AKZ20811	<i>A. phagocytophilum</i>	Spain	<i>Ixodes</i> sp.
KX987359	<i>Candidatus Anaplasma</i> boleense	WHBMXZ/China	<i>Rhipicephalus microplus</i>
KR261628	<i>A. capra</i>	China	<i>Haemaphysalis longicornis</i>
KP861638	<i>A. phagocytophilum</i>	NY18/US	<i>Ixodes</i> sp.
KP861637	<i>A. phagocytophilum</i>	DogL610/Germany	<i>Ixodes</i> sp.
CP046391	<i>A. platys</i> strain S3	Saint Kitts	Dog
DQ525687	<i>A. platys</i>	Sicily/Italy	Dog
LC269826	<i>A. platys</i>	ZAM dog/Zambia	Dog
AY570541	<i>Anaplasma</i> sp. SA dog	South Africa	Dog
AAT74599	<i>Anaplasma</i> sp. SA dog	South Africa	Dog
LC269827	<i>Anaplasma</i> sp. ZAM dog	Zambia	Dog
U59729	<i>Rickettsia rickettsii</i>	Iowa/US	Vero cells

**Table S4:** Sample information for the 16S rRNA, *gltA*, *msp4* and *ankA* sequences generated in this study.

Accession number	Sample ID	Species	Origin	Host	Sequence type
<b>16S rRNA</b>					
MK814405	D2-1	<i>A. phagocytophilum</i>	Hluvukani	Dog	Aph1/16S
MK814406	D2-2	<i>A. phagocytophilum</i>	Hluvukani	Dog	Aph1/16S
MK814404	D2-4	<i>A. phagocytophilum</i>	Hluvukani	Dog	Aph1/16S
MK814402	D2-5	<i>A. phagocytophilum</i>	Hluvukani	Dog	Aph1/16S
MK814403	D2-8	<i>A. phagocytophilum</i>	Hluvukani	Dog	Aph1/16S
MK814410	*D24	<i>A. phagocytophilum</i>	Hluvukani	Dog	Aph2/16S
MK814412	*D28	<i>A. phagocytophilum</i>	Hluvukani	Dog	Aph2/16S
MK814407	H59	<i>A. phagocytophilum</i>	Hluvukani	Human	Aph/1or2/16S
MK814411	*R98	<i>A. phagocytophilum</i>	Hlalakahle	<i>Mastomys natalensis</i>	Aph2/16S
MK814408	R102	<i>A. phagocytophilum</i>	Thlavekisa	<i>Rattus tanezumi</i>	Aph/1or2/16S
MK814409	R103	<i>A. phagocytophilum</i>	Thlavekisa	<i>Mastomys natalensis</i>	Aph/1or2/16S
MK814426	D3-1	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814428	D3-5	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814425	D3-6	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814423	D3-7	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog16S1
MK814427	D5-1	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814441	D9-6	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog2/16S
MK814431	D27-2	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814435	D27-9	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog2/16S
MK814422	D27-1	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814429	D27-13	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814433	D36-3	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814432	D36-9	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814430	D36-10	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814434	D36-11	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814446	D37-1	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814447	D37-4	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814424	D37-8	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814445	D37-9	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/16S
MK814436	D3	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog2/16S
MK814438	D5	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog2/16S
MK814443	D27	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog2/16S
MK814439	*D36	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog2/16S
MK814437	D37	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog2/16S
MK814442	RA3	<i>Anaplasma</i> sp. SA dog	Athol	<i>Rhipicephalus sanguineus</i>	Adog2/16S
MK814440	RH3	<i>Anaplasma</i> sp. SA dog	Hluvukani	<i>Rhipicephalus sanguineus</i>	Adog2/16S
MK814444	RH8	<i>Anaplasma</i> sp. SA dog	Hluvukani	<i>Rhipicephalus sanguineus</i>	Adog2/16S
MK814416	D25-2	<i>A. platys</i>	Hluvukani	Dog	Apla1/16S
MK814419	D25-5	<i>A. platys</i>	Hluvukani	Dog	Apla1/16S
MK814414	D25-6	<i>A. platys</i>	Hluvukani	Dog	Apla1/16S
MK814417	D25-8	<i>A. platys</i>	Hluvukani	Dog	Apla1/16S
MK814418	D25-9	<i>A. platys</i>	Hluvukani	Dog	Apla1/16S
MK814415	D33-3	<i>A. platys</i>	Hluvukani	Dog	Apla1/16S
MK814421	D33-4	<i>A. platys</i>	Hluvukani	Dog	Apla1/16S
MK814420	D33-5	<i>A. platys</i>	Hluvukani	Dog	Apla1/16S
MK814413	D33-7	<i>A. platys</i>	Hluvukani	Dog	Apla1/16S
MK814448	*C5	<i>Anaplasma</i> sp. Mymensingh	Hlalakahle	Cattle	Asm1/16S
MK814450	*C13	<i>Candidatus Anaplasma</i> <i>boleense</i>	Seville A	Cattle	Cab1/16S
MK814449	*C91	<i>Anaplasma</i> sp. Mymensingh	Seville A	Cattle	Asm1/16S

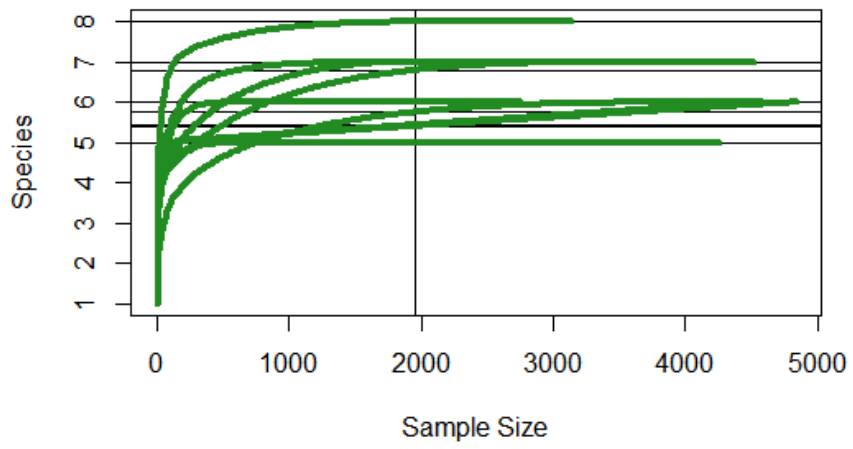
<b>GltA</b>					
MK804077	D24	<i>A. phagocytophilum</i>	Hluvukani	Dog	Aph1/GltA
MK804079	D25	<i>A. phagocytophilum</i>	Hluvukani	Dog	Aph1/GltA
MK804078	D28	<i>A. phagocytophilum</i>	Hluvukani	Dog	Aph1/GltA
MK804080	R102	<i>A. phagocytophilum</i>	Thlavekisa	<i>Rattus tanezumi</i>	Aph1/GltA
MK804081	D36	<i>Anaplasma</i> sp. SA dog	Hluvukani	Dog	Adog1/GltA
<b>Msp4</b>					
MK804088	D3	<i>Anaplasma</i> sp.	Hluvukani	Dog	AspM/Msp4
MK804089	D33	<i>Anaplasma</i> sp.	Hluvukani	Dog	AspM/Msp4
MK804096	R102	<i>Anaplasma</i> sp.	Thlavekisa	<i>Rattus tanezumi</i>	AspM/Msp4
MK804097	R102-8	<i>Anaplasma</i> sp.	Thlavekisa	<i>Rattus tanezumi</i>	AspM/Msp4
MK804099	R102-10	<i>Anaplasma</i> sp.	Thlavekisa	<i>Rattus tanezumi</i>	AspM/Msp4
MK804093	R103	<i>Anaplasma</i> sp.	Thlavekisa	<i>Mastomys natalensis</i>	AspM/Msp4
MK804098	R103-8	<i>Anaplasma</i> sp.	Thlavekisa	<i>Mastomys natalensis</i>	AspM/Msp4
MK804103	R104-7	<i>Anaplasma</i> sp.	Thlavekisa	<i>Mastomys natalensis</i>	AspM/Msp4
MK804092	R105	<i>Anaplasma</i> sp.	Thlavekisa	<i>Mastomys natalensis</i>	AspM/Msp4
MK804102	R105-4	<i>Anaplasma</i> sp.	Thlavekisa	<i>Mastomys natalensis</i>	AspM/Msp4
MK804100	R105-5	<i>Anaplasma</i> sp.	Thlavekisa	<i>Mastomys natalensis</i>	AspM/Msp4
MK804083	R124	<i>Anaplasma</i> sp.	Hlalakahle	<i>Saccostomus</i> sp.	AspM/Msp4
MK804101	R125-2	<i>Anaplasma</i> sp.	Hlalakahle	<i>Gerbillicus leucogaster</i>	AspM/Msp4
MK804087	R138	<i>Anaplasma</i> sp.	Hlalakahle	<i>Gerbillicus leucogaster</i>	AspM/Msp4
MK804094	H27	<i>Anaplasma</i> sp.	Hluvukani	Human	AspM/Msp4
MK804104	H47	<i>Anaplasma</i> sp.	Hluvukani	Human	AspM/Msp4
MK804085	H53	<i>Anaplasma</i> sp.	Hluvukani	Human	AspM/Msp4
MK804086	RA1	<i>Anaplasma</i> sp.	Athol	<i>Rhipicephalus sanguineus</i>	AspM/Msp4
MK804095	RH1	<i>Anaplasma</i> sp.	Hluvukani	<i>Rhipicephalus sanguineus</i>	AspM/Msp4
MK804082	RH3	<i>Anaplasma</i> sp.	Hluvukani	<i>Rhipicephalus sanguineus</i>	AspM/Msp4
MK804091	RA3	<i>Anaplasma</i> sp.	Athol	<i>Rhipicephalus sanguineus</i>	AspM/Msp4
MK804084	RH8	<i>Anaplasma</i> sp.	Hluvukani	<i>Rhipicephalus sanguineus</i>	AspM/Msp4
MK804090	C42	<i>Anaplasma</i> sp.	Seville B	Cattle	AspM/Msp4
<b>AnkA</b>					
MK804106	D3	<i>Anaplasma</i> sp.	Hluvukani	Dog	AspA/AnkA
MK804109	D33	<i>Anaplasma</i> sp.	Hluvukani	Dog	AspA/AnkA
MK804108	D36	<i>Anaplasma</i> sp.	Hluvukani	Dog	AspA/AnkA
MK804105	R102	<i>Anaplasma</i> sp.	Thlavekisa	<i>Rattus tanezumi</i>	AspA/AnkA
MK804110	R103	<i>Anaplasma</i> sp.	Thlavekisa	<i>Mastomys natalensis</i>	AspA/AnkA
MK804107	R124	<i>Anaplasma</i> sp.	Hlalakahle	<i>Saccostomus</i> sp.	AspA/AnkA
MK804111	RH1	<i>Anaplasma</i> sp.	Hluvukani	<i>Rhipicephalus sanguineus</i>	AspA/AnkA

\*Sequences were extracted from data generated from the characterization of the bacterial blood microbiome of dogs, cattle and rodents in the Mnisi community area, Mpumalanga Province South Africa.

*msp2*

		1		80
<i>A. platys</i>	(1)	ATGA	---	AGGAAAGAAA
<i>A. phagocytophilum</i>	(1)	ATGA	GAAA	AGGAAAGATAA
		81		160
<i>A. platys</i>	(77)	CGG	CA	GGGTCG
<i>A. phagocytophilum</i>	(79)	---	CATGAT	--GACGTTAG
		161		240
<i>A. platys</i>	(157)	AGT	AAGATAA	ATGGTTT
<i>A. phagocytophilum</i>	(154)	AGC	AAGATAA	GAGATTT
		241		320
<i>A. platys</i>	(237)	AGT	GGAGTGGAA	AGCTGAG
<i>A. phagocytophilum</i>	(234)	TGT	AAAGCTAG	AGTACACA
		321		400
<i>A. platys</i>	(317)	TAGA	AGGAAGTGT	GGCCTAC
<i>A. phagocytophilum</i>	(314)	TG	GAAGGC	CAGTGTGG
		401		480
<i>A. platys</i>	(397)	ATA	AGAGATA	CGGCAAG
<i>A. phagocytophilum</i>	(394)	AT	TAGAGATA	GTGGTAG
		481		560
<i>A. platys</i>	(477)	TGAC	CAGAGC	GATAAAT
<i>A. phagocytophilum</i>	(474)	TG	CAGACT	GATAAGCT
		561		640
<i>A. platys</i>	(557)	CAT	GGCAAAG	GATATT
<i>A. phagocytophilum</i>	(554)	TT	TCAGCCCT	GAAATT
		641		720
<i>A. platys</i>	(632)	-----	CGCAGAC	TGGCAG
<i>A. phagocytophilum</i>	(633)	TG	CGGAGTTGT	CGACGAC
		721		800
<i>A. platys</i>	(690)	---	AGACGTA	-----
<i>A. phagocytophilum</i>	(712)	CCA	AGACGTT	AGTGGTTT
		801		880
<i>A. platys</i>	(741)	C	GC	TGCGAA
<i>A. phagocytophilum</i>	(792)	CAG	CAGTC	AAAAC
		881		960
<i>A. platys</i>	(797)	AAA	GAA	CAAG
<i>A. phagocytophilum</i>	(872)	AAAA	AACCA	TAGTAG
		961		1040
<i>A. platys</i>	(877)	TC	AGTAAT	GTGAAT
<i>A. phagocytophilum</i>	(952)	TCT	GTAAT	GTGAAT
		1041		1120
<i>A. platys</i>	(957)	TA	ACTTCGT	TGGCA
<i>A. phagocytophilum</i>	(1032)	TA	ACTTCGT	AGGTG
		1121		1200
<i>A. platys</i>	(1037)	CG	CCG	AAATCT
<i>A. phagocytophilum</i>	(1112)	CT	CC	TGAAATCT
		1201		1280
<i>A. platys</i>	(1117)	AG	GCTGT	TAGACG
<i>A. phagocytophilum</i>	(1192)	CG	TCTGT	TAGATG
		1281		1308
<i>A. platys</i>	(1194)	TGA	A	TCGGT
<i>A. phagocytophilum</i>	(1272)	GGA	A	TTGGT

**Figure S1:** Alignment of *msp2* sequences from *A. platys* and *A. phagocytophilum*. The *A. platys* sequence corresponds to accession # GU357491, while the *A. phagocytophilum* sequence was taken from the expression site of the HGE1 strain genome (Accession # APHH0000000). The underlined regions show the primers used in the study. The reverse complement (rc) of the reverse primer is underlined. The TaqMan probe is double underlined. The numbers above each row indicate the alignment position number. The numbers at the start of each row in parentheses indicate the base number of the first base on that row for that sequence. Only two sequences are shown because the primers do not sit in the variable region of this gene.



**Figure S2:** Representative rarefaction curves from samples tested. The mean species diversity of bacterial populations was plotted as a function of read depth. The vertical line in the plot indicates the value where rarefaction criterion was satisfied.

msp4

		1		80
AmStM	(1)	ATGAATTACAGAGAATTGTTTACAGGGGGCCGTGCAGCAGCCACAGTCTGCGCTGCTCCCTACTTGTAGTGGGGCCGT		
AcIs	(1)	ATGAATTACAGAGAATTGTTTACAGGGGGCCGTGCAGCAGCCACAGTCTGCGCTGCTCCCTACTTGTAGTGGGGCCGT		
AoHa	(1)	ATGAATTACAGAGAATTGTTTACAGGGGGCCGTGCAGCAGCCACAGTCTGCGCTGCTCCCTACTTGTAGTGGGGCCGT		
ApI	(1)	ATGAATTACAGAGAATTACTTGTAGGAGCTTGTCTGCTATGGCAGTCTGCGCATGCTCTCTACAGTTAGTGAATCCTC		
ApHGE1	(1)	ATGAATTACAGAGAATTGCTTGTAGGAGCCTATCTGCGGGCCAGTATGTGCTGCTCCCTTTAAATAGTGGATCCTC		
ApHZ	(1)	ATGAATTACAGAGAATTGCTTGTAGGAGCCTATCTGCGGGCCAGTATGTGCTGCTCCCTTTAAATAGTGGATCCTC		
		81		160
AmStM	(81)	AGTGGCATCTCCATGAGTCAAGAACTGGCTTCTGAAGGG---GGAGTAATGGGAGGTAGCTTTTACGTGGGTGCGGCT		
AcIs	(81)	AGTAGCCTCCCATGAGTCAAGAACTGGCTTCTGAAGGG---GGAGTAATGGGAGGTAGCTTTTATGTAGCACAGCTT		
AoHa	(81)	AGTGGCGTCTCCATGAGTCAAGAACTGGCTTCTGAAGGGGGTTCATGGGAGGTAGCTTTTATGTAGTGGCGCTT		
ApI	(81)	ATTGGCGTCTCCATGAGTCAAGAACTGGCTTCTGAAGGGGGTTCATGGGAGGTAGCTTTTATGTAGTGGCGCTT		
ApHGE1	(81)	ATTTGCGTATTCAGGCAATAATGATGCG---TCTGATGTTAGCGGTGTTATGAACGGCAGCTTTTACGTAAGTGGTAGCT		
ApHZ	(81)	ATTTGCGTATTCAGGCAATAATGATGCG---TCTGATGTTAGCGGTGTTATGAACGGCAGCTTTTACGTAAGTGGTAGCT		
		161	AB1692F	240
AmStM	(158)	ACAGCCAGCAATTCCTTCTGTACCTCGTTCCAGATGCGTGAAGTCAAGCAAAGAGACCTCATACGTTAGGGCTATGAC		
AcIs	(161)	ACAGCCAGCAATTCCTTCTGTACCTCGTTCCAGATGCGTGAAGTCAAGCAAAGAGACCTCATACGTTAGGGCTATGAC		
AoHa	(161)	ACAGCCAGCAATTCCTTCTGTACCTCATTTCCAGATGCGTGAAGTCAAGCAAAGAGACCTCATACGTTAGGGCTATGAC		
ApI	(161)	ACAGTCCAACTTTCCTTCCATTAATCTTTTTCAGATGAGGGAATCTGGTCTGTATAGTCTTACGTTAAAGGATCCTC		
ApHGE1	(158)	ACAGTCCGTCATTCCTTCTATATCTTCATTTGCTATTAGTGAAGTCAAGCAAAGAGACCTCATACGTTAAAGGATTAAC		
ApHZ	(158)	ACAGTCCGTCATTCCTTCTATATCTTCATTTGCTATTAGTGAAGTCAAGCAAAGAGACCTCATACGTTAAAGGATTAAC		
		241		320
AmStM	(238)	AAGAGCCTTGCAACGATTGATGTGAGTGTGCGGCAACTTTTCCAAATCTGGCTACACTTTTGCCTTCTTAAGAACTT		
AcIs	(241)	AAGAGCCTTGCAACGATTGATGTGAGTGTGCGGCAACTTTTCCAAATCTGGCTACACTTTTGCCTTCTTAAGAACTT		
AoHa	(241)	AAGAGCCTTGCAACGATTGATGTGAGTGTGCGGCAACTTTTCCAAATCTGGCTACACTTTTGCCTTCTTAAGAACTT		
ApI	(241)	AAAACCGCTCTACACTCAATATCTCGCAACTGAAACTTCAATCAAGAGGACACACTTTTAAATTTGCAAAAGAACTT		
ApHGE1	(238)	AAGAATTTGAGCACCTTGAATGTTTCAGATCTGCCAGCTTCAAGCAAAGTCAAGTATCCCTCATTCAAGTTGCTAAGGTTT		
ApHZ	(238)	AAGAATTTGAGCACCTTGAATGTTTCAGATCTGCCAGCTTCAAGCAAAGTCAAGTATCCCTCATTCAAGTTGCTAAGGTTT		
		321		400
AmStM	(318)	AATCACATCTTTGACGGCGCTGTGGATATTTCTCTAGGAGGAGCCAGAGTGAATTGAAGCGAGCTACAGAAAGTTTG		
AcIs	(321)	ACTTAGCTCTTTGATGGTGTGTGGATATTTCTCTAGGAGGAGCCAGAGTGAATTGAAGCGAGCTACAGAAAGTTTG		
AoHa	(321)	ACTCACATCTTTGACGGCGCTGTGGATATTTCTCTAGGAGGAGCTAGAGTGAATTGAAGCGAGCTACAGAAAGTTTG		
ApI	(321)	GCTAACATCTTTGAGGGAGCTGCAAGTTATGCAATGGCGGTGCTAGAGTGAAGTGAAGCTGGATACAAAATTTTG		
ApHGE1	(318)	ACTAACATCTTTGACGGTGAACCTGGCTATGCTATTGGCGGAGCTAGAGTGAAGTGAAGTGGATATAAAAAGTTTG		
ApHZ	(318)	ACTAACATCTTTGACGGTGAACCTGGCTATGCTATTGGCGGAGCTAGAGTGAAGTGAAGTGGATATAAAAAGTTTG		
		401		480
AmStM	(398)	CTACTTTGGCGGACGGGCACTACCGCAAAAGTGGTGGGAATCTCTGGCAGCTATTACCGCGACCGTAAACATTA		
AcIs	(401)	CTACTTTGGCGGACGGGCACTACCGCAAAAGTGGTGGGAATCTCTGGCAGCTATTACCGCGAGCTGCGTCACTGCA		
AoHa	(401)	CTACTTTAGCGGACGGGCACTACCGCAAAAGTGGTGGGAATCTCTGGCAGCTATTACCGCGAGCTGCGTCACTGCA		
ApI	(401)	CTGCTACTTCTGATGTGGATTACAAAATGCGAGATGCTCATCAGTTCGTCGGTATAGGACGTTGAACAGTATTCGACAG		
ApHGE1	(398)	AAACGCTCGCTGAAAGTGAATGTTTCAGATCTGCCAGCTTCAAGCAAAGTCAAGTATCCCTCATTCAAGTTGCTAAGGTTT		
ApHZ	(398)	AAACGCTCGCTGAAAGTGAATGTTTCAGATCTGCCAGCTTCAAGCAAAGTCAAGTATCCCTCATTCAAGTTGCTAAGGTTT		
		481		560
AmStM	(478)	ACCAATTAATTTGATGAAATTCACAAACACCTCAGTCAATGAAATGGCTGCTATGACGTTGTCACAC		
AcIs	(481)	ACCAATTAATTTGATGAAATTCACAAACACCTCAGTCAATGAAATGGCTGCTATGACGTTGTCACAC		
AoHa	(481)	AACAATTAATTTGATGAAATTCACAAACACCTCAGTCAATGAAATGGCTGCTATGACGTTGTCACAC		
ApI	(481)	CGAAATTAATTTGATGAAATTCACAAACACCTCAGTCAATGAAATGGCTGCTATGACGTTGTCACAC		
ApHGE1	(478)	GACAACTTCTTTGTAATGAAATAGACAGCGTCAAGATATATCTGTAATGCTTAACTGTTTACGACGTTATGCATAC		
ApHZ	(478)	GACAACTTCTTTGTAATGAAATAGACAGCGTCAAGATATATCTGTAATGCTTAACTGTTTACGACGTTATGCATAC		
		561		640
AmStM	(558)	AGATTACCTGTGTCCTCGTATGATGTCGGGATAGGCGAAGCTTTGTTGACATCTCTAAGCAAGTAAACCAAAAGC		
AcIs	(561)	GGATTTCCTGTGTCCTCGTATGATGTCGGGATAGGCGAAGCTTTGTTGACATCTCTAAGCAAGTAAACCAAAAGC		
AoHa	(561)	AGATTTCCTGTGTCCTCGTATGATGTCGGGATAGGCGAAGCTTTGTTGACATCTCTAAGCAAGTAAACCAAAAGC		
ApI	(561)	TGATTTCCTGTGTCCTCGTATGATGTCGGGATAGGCGAAGCTTTGTTGACATCTCTAAGCAAGTAAACCAAAAGC		
ApHGE1	(558)	TGACTTCCTGTATCTCCTTACATGTTGCTGGTTAGGGGGAGCTTTAATAATATGCCGATCACGTTAAGTAAAGT		
ApHZ	(558)	TGACTTCCTGTATCTCCTTACATGTTGCTGGTTAGGGGGAGCTTTAATAATATGCCGATCACGTTAAGTAAAGT		
		641		720
AmStM	(638)	TGGCTTACAGGGCAAGGTTGGATTAGTACCAGTTTACTCCGAAATATCCTTGGTGGCAAGTGGGTTCTACCACGGG		
AcIs	(641)	TAGCCTACAGAGGTAAAGGTTGGATAAGTACCAGTTTACTCCGAAATATCCTTGGTGGCAAGTGGGTTCTACCATGGA		
AoHa	(641)	TAGCCTACAGGGCAAGGTTGGAACTAGTACCAGTTTACTCCGAAATATCCTTGGTGGTAAGTGGGTTCTACCACGGA		
ApI	(641)	TAGCTTACAAAGGTAAAGTGGTGTAGTACCAGTTTACTCCGAAATATCCTTGGTGGTAAAGTGGGTTTACCATGCG		
ApHGE1	(638)	TGGCTTATAGAGGAAAGGTAAGCGTAAAGTTTACTCCTGAAATATCCTTAAATAGCTGGAGGTTTTTACCACGGA		
ApHZ	(638)	TGGCTTATAGAGGAAAGGTAAGCGTAAAGTTTACTCCTGAAATATCCTTAAATAGCTGGAGGTTTTTACCACGGA		
		721		800
AmStM	(718)	CTATTTGATGATCTTCAAGGACATTCCTCCGACACAAACAGTGTAAAGTTCTCTGGAGAAGCAAAAGCCTCAGTCAAAGC		
AcIs	(721)	CTTTTGCAGAACTTATAAGGACATTCCTCCGACACAAACAGTGTAAAGTTCTCCTGGAGAAGCAAAAGCCTCAATCAAAGC		
AoHa	(721)	CTTTTGCAGAACTTATAAGGACATTCCTCCGACACAAACAGTGTAAAGTTCTCCTGGAGAAGCAAAAGCCTCAGTCAAAGC		
ApI	(721)	CTATTTGATGAAAGTTTCAAGAACTTCTGCAAACTAAGGTAAGTTCTGCTGGTGAAGCTTTGGCAACAGTGAAGGC		
ApHGE1	(718)	ATTTTGCATGAAAGTATGCAAGTATTCCTCCGCTAGTAACTGTAACATAGCAGGTTGGTGTGCAAGCAAGGTAAGGC		
ApHZ	(718)	ATTTTGCATGAAAGTATGCAAGTATTCCTCCGCTAGTAACTGTAACATAGCAGGTTGGTGTGCAAGCAAGGTAAGGC		
		801	852 rc of AB1693R	
AmStM	(798)	GCATATTGCTGACTACGGCTTTAACTTGGAGCAAGATTCTGTTTCAAGCTAA		
AcIs	(801)	GCACGTTGCTGATTACGGCTTTAACTTGGAGCAAGATTCTGTTTCAAGCTAA		
AoHa	(801)	ACATATTGCTGATTACGGCTTTAACTTGGAGCAAGATTCTGTTTCAAGCTAA		
ApI	(801)	TAACTTGCAGAACTTATGATTCAATCTGGAGCAAGATTCTGTTTCAAGCTAA		
ApHGE1	(798)	AAATATAGCTAGTTACGGCTTCAACATAGGAGCAAGATTCTTTCATTA		
ApHZ	(798)	AAATATAGCTAGTTACGGCTTCAACATAGGAGCAAGATTCTTTCATTA		

**Figure S3:** Alignment of *msp4* sequences from several species of *Anaplasma*. The sequences were taken from genome sequences for each species. Abbreviations and genome accession numbers are as follows: AmStM = *A. marginale* St. Maries strain (CP000030); AcIs = *A. centrale* Israel strain (CP001759); AoHa = *A. ovis* Haibei strain (CP015994); Apl = *A. platys* S3 strain (CP046391); ApHGE1 = *A. phagocytophilum* HGE1 strain (APHH00000000); ApHZ = *A. phagocytophilum* HZ strain (CP000235). The underlined regions show the primers used in the study. The reverse complement (rc) of the reverse primer is underlined. The numbers above each row indicate the alignment position number. The numbers at the start of each row in parentheses indicate the base number of the first base on that row for that sequence.



