

One health genomic surveillance of *Staphylococcus aureus* reveals distinct lineages in isolates from Miranda donkeys (*Equus asinus*) and their handlers

Vanessa Silva ^{1,2,3,4}, Cláudia Alfarela ¹, Manuela Caniça ^{5,6}, Vera Manageiro ^{5,6}, Miguel Nóvoa ⁷, Belen Leiva ⁷, Maria Kress ⁷, José Luís Capelo ^{8,9}, Patrícia Poeta ^{1,4,10,11,*} and Gilberto Igrejas ^{2,3,4,†}

¹ Microbiology and Antibiotic Resistance Team (MicroART), Department of Veterinary Sciences, University of Trás-os-Montes and Alto Douro (UTAD), 5000-801 Vila Real, Portugal; vanessasilva@utad.pt (V.S.); claudiavpa@hotmail.com (C.A.)

² Department of Genetics and Biotechnology, University of Trás-os-Montes and Alto Douro, 5000-801 Vila Real, Portugal; gigrejas@utad.pt

³ Functional Genomics and Proteomics Unit, University of Trás-os-Montes and Alto Douro (UTAD), 5000-801 Vila Real, Portugal

⁴ Associated Laboratory for Green Chemistry (LAQV-REQUIMTE), University NOVA of Lisboa, Lisboa, 2825-466 Caparica, Portugal

⁵ National Reference Laboratory of Antibiotic Resistances and Healthcare Associated Infections (NRL-AMR/HAI), Department of Infectious Diseases, National Institute of Health Dr Ricardo Jorge, Av. Padre Cruz, 1649-016 Lisbon, Portugal; manuela.canica@insa.min-saude.pt (M.C.); vera.manageiro@insa.min-saude.pt (V.M.)

⁶ Centre for the Studies of Animal Science, Institute of Agrarian and Agri-Food Sciences and Technologies, Oporto University, 4051-401 Oporto, Portugal

⁷ AEPGA, Association for the Study and Protection of Asinines, Atenor, 5225-011 Miranda do Douro, Portugal; miguelnovoaa@aepga.pt (M.N.); belenleiva.aepga@gmail.com (B.L.); mariakress.aepga@gmail.com (M.K.)

⁸ BIOSCOPE Group, LAQV@REQUIMTE, Chemistry Department, Faculty of Science and Technology, NOVA University of Lisbon, 2825-466 Almada, Portugal; jlcm@fct.unl.pt

⁹ Proteomass Scientific Society, 2825-466 Costa de Caparica, Portugal

¹⁰ CECAV – Veterinary and Animal Research Centre, University of Trás-os-Montes and Alto Douro (UTAD), 5000-801 Vila Real, Portugal

¹¹ Associate Laboratory for Animal and Veterinary Sciences (AL4AnimalS), Portugal

* Correspondence: ppoeta@utad.pt

† These authors contributed equally to this work

Table S1. Description of donkeys and handlers' samples, farms, sampling locations and staphylococci recovery.

Sample	Donkey/ Handler	Age (years)	Gender	Farm	Location	Isolate
B1	Donkey	3	M	1	Atenor	VS3136
B2	Donkey	16	F	1	Atenor	
B3	Donkey	1.5	M	1	Atenor	VS3129
B4	Donkey	14	M	1	Atenor	VS3137
B5	Donkey	2	F	1	Atenor	VS3132
B6	Donkey	4	F	1	Atenor	VS3123
B7	Donkey	13	M	1	Atenor	VS3124
B8	Donkey	14	F	2	Atenor	VS3125
B9	Donkey	0.3	M	1	Atenor	VS3135
B10	Donkey	8	F	1	Atenor	VS3121
B11	Donkey	5	M	1	Atenor	
B12	Donkey	15	F	1	Atenor	VS3133
B13	Donkey	10	M	1	Atenor	VS3119
B14	Donkey	9	F	2	Atenor	
B15	Donkey	8	F	2	Atenor	VS3122
B16	Donkey	8	F	1	Atenor	VS3139

B17	Handler	23	M	2	Atenor	
B18	Handler	23	M	1	Atenor	VS3101
B19	Handler	30	F	1	Atenor	VS3102
B20	Handler	30	F	1	Atenor	VS3115
B21	Handler	35	F	1	Atenor	
B22	Handler	28	M	1	Atenor	VS3103
B23	Handler	48	F	2	Atenor	VS3104
B24	Donkey	-	F	3	Malhadas	
B25	Donkey	2	F	3	Malhadas	VS3120
B26	Donkey	13	F	3	Malhadas	
B27	Donkey	18	F	3	Malhadas	
B28	Donkey	20	F	3	Malhadas	
B29	Donkey	-	M	5	Vila Chã	VS3138
B30	Donkey	-	F	6	Pena Branca	VS3134
B31	Donkey	-	F	6	Pena Branca	VS3126
B32	Donkey	-	F	6	Pena Branca	
B33	Donkey	-	F	7	Paradela	
B34	Donkey	-	F	7	Paradela	
B35	Donkey	-	F	7	Paradela	
B36	Handler	71	F	3	Malhadas	VS3116
B37	Handler	64	F	3	Malhadas	
B38	Handler	66	F	3	Malhadas	
B39	Handler	79	M	5	Vila Chã	VS3109
B40	Handler	74	M	3	Malhadas	
B41	Handler	70	F	7	Paradela	VS3110
B42	Handler	72	M	7	Paradela	
B43	Donkey	7	F	4	Malhadas	VS3131
B44	Donkey	21	F	4	Malhadas	
B45	Donkey	3	F	8	Palacar	
B46	Donkey	4	M	4	-	VS3127
B47	Donkey	9	F	4	Malhadas	VS3128
B48	Handler	71	F	8	Palancar	VS3118
B49	Handler	61	F	4	Malhadas	
B50	Handler	34	M	10	Bemposta	
B51	Handler	70	M	11	Mogadouro	
B52	Handler	68	M	15	Uva	VS3117
B53	Handler	56	M	12	Sendim	VS3105
B54	Handler	42	M	9	Sendim	VS3106
B55	Handler	69	M	14	Uva	VS3107
B56	Handler	65	M	13	Vila Chã da Ribeira	VS3108
B57	Donkey	8	F	9	Sendim	
B58	Donkey	2.5	F	14	Uva	
B59	Donkey	11	F	14	Uva	
B60	Donkey	5	F	15	Uva	
B61	Donkey	6	M	9	Sendim	
B62	Donkey	3	F	15	Uva	
B63	Donkey	4.5	F	9	Sendim	
B64	Donkey	4.5	F	13	Vila Chã da Ribeira	
B65	Donkey	8	F	11	Mogadouro	
B66	Donkey	7	F	10	Bemposta	VS3111
B67	Donkey	5	F	11	Mogadouro	VS3112

B68	Donkey	8	F	10	Bemposta	VS3113
B69	Donkey	3.5	M	10	Bemposta	VS3114
B70	Donkey	9	F	15	Uva	VS3130
B71	Donkey	6	F	12	Sendim	
B72	Donkey	4	M	12	Sendim	
