

Properties and origin of *Acinetobacter baumannii* strains

The data are from this study and from Nemeč *et al.* (1999) and Pantophlet *et al.* (2001). NIPH, Collection A. Nemeč, National Institute of Public Health, Prague; LUH and RUH, Collection L. Dijkshoorn, Leiden University Medical Center, Leiden, the Netherlands; Czech Republic; CCM, Czech Collection of Microorganisms, Brno, Czech Republic. ARC, Czech strains from previous studies (Nemeč *et al.*, 1999; Pantophlet *et al.*, 2001); REC, Czech multidrug-resistant strains from 2000-2001; NWE, reference strains of northwestern European clones (Dijkshoorn *et al.*, 1996).

Strain designation	Other strain designations	Set of strains	<i>Hin dIII-Hin cII</i> ribotype	<i>EcoRI</i> ribotype *	AFLP cluster **	Biotype †	pANI ††	Reactivity with Mab ‡	Inhibition zone diameters (mm) ‡‡											Specimen	Date of isolation month/year	City (country) §	Specialty
									Ge <15	To <15	Am <17	Ne <15	AS <15	Cz <18	Im <16	Pi <18	Of <16	ST <16	Te <15				
<i>Clone I strains</i>																							
NIPH 7	LUH 3782 = CCM 7031	ARC	1-1	I	1	11	+	S48-3-13	6	17	7	15	10	18	27	9	10	6	7	Burn	2/1991	Praha 1	Burns unit
NIPH 10	LUH 3783 = CCM 7116	ARC	5-3	u	1	6	+	S51-3	6	15	6	13	13	17	26	10	8	6	7	Blood	7/1991	Praha 1	Burns unit
NIPH 15	LUH 3787 = CCM 7032	ARC	1-1	I	1	6	+	S48-3-13	7	20	21	19	10	21	27	10	24	6	6	Burn	6/1991	Praha 1	Burns unit
NIPH 56	LUH 4576	ARC	1-1	I	1	6	+	S48-3-13	16	20	21	19	29	20	29	22	25	7	12	Burn	8/1992	Praha 1	Burns unit
NIPH 188	LUH 4584	ARC	1-1	I	1	11	+	S48-3-13	6	7	10	17	10	20	27	10	8	6	8	Urine	10/1993	Praha 1	Medical I
NIPH 207	LUH 4585	ARC	1-1	I	1	11	+	S48-3-13	12	23	18	20	15	20	28	9	13	7	10	Urine	11/1992	Liberec	ICU
NIPH 281	LUH 4635 = CCM 7034	ARC	1-1	I	1	11	+	S48-3-13	6	7	7	15	10	20	28	10	7	6	6	Blood	7/1994	Příbram 1	ICU
NIPH 290	LUH 4596	ARC	1-1	I	1	11	+	S48-3-13	6	6	6	11	12	12	25	11	6	6	6	Urine	10/1994	Příbram 1	ICU
NIPH 307	LUH 4602	ARC	1-1	I	1	11	+	S48-3-13	6	8	7	17	12	21	28	10	7	7	7	Burn	6/1994	Ostrava	Burns unit
NIPH 309	LUH 4637	ARC	1-1	I	1	11	+	S48-3-13	6	8	11	16	10	19	28	10	8	6	6	Urine	8/1994	Kladno	ICU
NIPH 321	LUH 4640	ARC	1-1	I	1	11	+	S48-3-13	6	17	8	14	10	19	25	9	8	6	7	Urine	8/1994	Tábor	Nursing home
NIPH 357	LUH 4607	ARC	1-1	I	1	11	+	S48-3-13	8	11	13	21	10	21	27	9	11	6	8	Sputum	7/1994	Slaný	ICU
NIPH 360	LUH 4609	ARC	1-1	I	1	6	+	S48-3-13	8	20	20	19	11	22	30	11	12	7	6	Tracheostomy	8/1994	Plzeň	ICU
NIPH 392	LUH 4617	ARC	1-1	I	1	11	+	S48-3-13	7	20	9	19	11	20	27	10	7	6	6	Decubitus	4/1996	Sedlčany	ICU
NIPH 408	LUH 4620	ARC	1-1	I	1	11	+	S48-3-13	6	6	16	13	10	18	25	10	6	6	6	Sputum	4/1996	Plzeň	ICU
NIPH 409	LUH 4621	ARC	1-1	I	1	6	+	S51-3	7	19	9	18	20	7	25	9	9	7	12	Urine	4/1996	Brno	Surgery ICU
NIPH 470	LUH 4624	ARC	1-1	I	1	6	+	S51-3	14	20	9	12	23	12	23	8	11	21	9	Bronchial secretion	1/1997	České Budějovice	ICU
NIPH 654	LUH 4643	ARC	1-1	I	1	6	+	S51-3	15	19	9	17	21	11	23	8	11	20	8	Drainage fluid	3/1996	Praha 1	Surgery
NIPH 693	LUH 8397	ARC	1-1	I	1	11	+	S48-3-13	6	7	7	16	28	20	27	22	7	6	7	Decubitus	5/1997	Vyšší Brod	Nursing home
NIPH 857	LUH 8398	ARC	1-1	I	1	11	+	S48-3-13	6	19	9	17	11	20	28	10	13	6	7	Havířov	5/1997	Havířov	Urology
NIPH 878	LUH 8399	ARC	1-1	I	1	6	+	S51-3	6	15	6	13	24	6	23	11	7	6	7	Cerebrospinal fluid	1/1998	Praha 2	Paediatrics
NIPH 881	LUH 8400	ARC	1-1	I	1	11	+	S48-3-13	6	19	10	17	10	16	26	8	7	6	6	Cannula	2/1998	Cheb	
NIPH 921	LUH 8401	ARC	1-1	I	1	ng	+	S48-3-13	7	19	11	18	10	16	26	8	7	6	6	Tracheostomy	11/1997	Ústí nad Labem	
NIPH 1150	LUH 8402	ARC	1-1	I	1	6	+	S51-3	9	20	11	22	21	9	21	7	9	6	6	Tracheostomy	6/1999	Hořovice	ICU
NIPH 1358	LUH 8967	REC	1-1	I	1	12			6	8	10	20	11	20	31	12	7	6	6	Wound swab	1/2000	Slaný	Surgery
NIPH 1359	LUH 8968	REC	1-1	I	1	6			10	23	13	24	24	11	23	10	10	6	7	Urine	1/2000	Slaný	ICU
NIPH 1475	LUH 8969	REC	1-1	I	1	11			6	7	8	17	10	21	30	10	8	6	9	Throat swab	2/2001	Cheb	ICU
NIPH 1477	LUH 7857	REC	1-1	I	1	11			6	13	22	28	18	26	34	15	7	6	8	Sputum	3/2001	Praha 5	Surgery ICU
NIPH 1486	LUH 8970	REC	1-1	I	1	11			6	7	9	17	8	20	16	10	8	6	8	Blood	3/2001	Praha 1	Burns unit
NIPH 1488	LUH 8971	REC	1-1	I	1	6			11	23	10	23	22	11	24	9	9	6	7	Blood	2/2001	Praha 1	ICU
NIPH 1499	LUH 7860	REC	1-1	I	1	6			7	21	11	22	22	11	24	8	8	6	6	Sputum	3/2001	Praha 4	Surgery ICU
NIPH 1500	LUH 7861	REC	1-1	u	1	11			6	18	9	16	8	17	29	8	8	6	6	Urine	3/2001	Praha 4	Surgery ICU
NIPH 1520	LUH 8973	REC	1-1	I	1	6			7	20	21	18	21	12	23	8	13	6	14	Tracheal aspirate	3/2001	Praha 7	ICU
NIPH 1574	LUH 8976	REC	1-1	I	1	6			10	23	7	24	23	11	25	10	10	6	7	Wound swab	5/2001	Praha 6	Surgery
NIPH 1587	LUH 8404	REC	1-1	XII (I)	1	11			6	19	20	17	9	20	31	9	9	6	9	Urine	6/2001	Příbram 1	ICU
NIPH 1605	LUH 7865	REC	3-1	u (I)	1	11			6	6	17	15	9	21	29	16	8	6	11	Urine	8/2001	Sedlčany	ICU
NIPH 1672	LUH 7868	REC	1-1	I	1	6			6	20	22	13	24	6	26	7	6	9	12	Pus (fistula)	10/2001	Trutnov	Surgery
NIPH 1693	LUH 8977	REC	1-1	I	1	11			6	6	6	16	10	20	32	12	6	6	6	Wound swab	6/2001	Praha 3	Surgery
NIPH 1722	LUH 7872	REC	3-1	u (I)	1	11			6	7	7	16	29	21	29	22	8	6	15	Urine	8/2001	Praha 3	Surgery ICU
NIPH 1729	LUH 7873	REC	1-1	I	1	11			6	8	10	14	10	17	29	12	6	6	6	Blood	10/2001	Strakonice	Surgery ICU
NIPH 1731	LUH 8979	REC	1-1	XII (I)	1	11			6	20	21	18	10	22	31	11	6	6	7	Intravenous cannula	11/2001	Příbram 2	ICU
RUH 875	NIPH 527	NWE	1-1	I	1	6	+	S48-3-13	6	6	19	15	11	18	28	10	22	6	7	Urine	1984	Dordrecht (NL)	Surgical
RUH 3242	NIPH 531 = GNU 1082	NWE	3-1	u (I)	1	6	+	S48-3-13	6	21	22	19	12	17	28	12	23	6	8	Burn wound	1989	Basildon (UK)	Burns unit
RUH 436	NIPH 535	NWE	1-1	I	1	6	+	S48-3-13	6	24	26	21	19	18	39	12	19	6	6	Sputum	1984	Utrecht (NL)	ICU
RUH 3282	NIPH 536 = GNU 1079	NWE	1-1	I	1	11	+	S48-3-13	6	19	6	7	9	8	22	6	10	6	7	Tracheostomy	1990	Salford (UK)	ICU
RUH 3238	NIPH 529 = GNU 1084	NWE	1-1	I	1	6	+	S48-3-13	6	20	21	18	10	20	30	9	24	6	6	Burn wound	1987	Sheffield (UK)	Burns unit
RUH 3239	NIPH 530 = GNU 1083	NWE	1-1	I	1	6	+	S48-3-13	6	17	18	13	9	17	31	9	24	6	7	Urine	1985-88	London (UK)	Urological
RUH 510	NIPH 532	NWE	1-1	I	1	6	+	S48-3-13	6	17	18	14	11	19	28	11	22	6	6	Bronchus	1984	Nijmegen (NL)	ICU
RUH 3247	NIPH 533 = GNU 1078	NWE	1-1	I	1	6	+	S48-3-13	13	7	18	6	10	18	31	10	7	6	6	Rectal mucosa	1990	Leuven (B)	Postsurgical ICU
RUH 2037	NIPH 534	NWE	1-1	I	1	6	+	S48-3-13	6	17	19	16	13	13	29	7	6	6	6	Sputum	1986	Venlo (NL)	ICU

Nemeč, A., Dijkshoorn, L. & van der Reijden, T. J. K. (2004). Long-term predominance of two pan-European clones among multi-resistant *Acinetobacter baumannii* strains in the Czech Republic. *J Med Microbiol* **53**, 147–153.

Strain designation	Other strain designations	Set of strains	Hin dIII-Hin cII ribotype	Eco RI ribotype *	AFLP cluster **	Biotype †	pAN1 ††	Reactivity with Mab ‡	Inhibition zone diameters (mm) ‡‡												Specimen	Date of isolation month/year	City (country) §	Specialty
									Ge	To	Am	Ne	AS	Cz	Im	Pi	Of	ST	Te					
									<15	<15	<17	<15	<15	<18	<16	<18	<16	<16	<15					
Clone II strains																								
NIPH 24	LUH 3788 = CCM 7033	ARC	2-2	II	2	2	-	S53-32	6	15	16	13	11	20	26	11	22	7	6	Urinary catheter	9/1991	Praha 1	Burns unit	
NIPH 141	LUH 4578	ARC	2-2	II	2	2	-	S53-32	9	20	21	18	26	20	27	20	21	6	6	Intravenous cannula	6/1993	Praha 1	Neurological ICU	
NIPH 220	LUH 4586	ARC	2-2	II	2	2	-	S53-32	6	9	9	6	13	13	19	12	17	20	6	Lung dissection	1/1993	Kladno	Neonatology	
NIPH 330	LUH 4603	ARC	2-2	II	2	2	-	S53-32	7	19	20	17	25	19	27	20	22	6	6	Pus	7/1994	Tábor	Orthopaedic	
NIPH 455	LUH 4623	ARC	2-2	II	2	2	-	S53-32	8	20	9	18	11	14	25	9	7	22	6	Blood	9/1996	Jihlava	ICU	
NIPH 471	LUH 4625	ARC	2-2	II	2	2	-	S53-32	8	20	20	17	12	21	27	11	24	6	6	Bronchial secretion	1/1997	České Budějovice	ICU	
NIPH 499	LUH 8964	ARC	2-2	II	2	2	+	S53-32	8	22	23	20	17	17	31	11	19	6	6	Sputum	4/1997	Příbram 2	ICU	
NIPH 657	LUH 4629 = CCM 7117	ARC	6-4	X (II)	2	2	-	No reactivity	8	19	8	18	25	16	25	8	14	7	6	Tracheostomy	4/1996	Praha 1	Neurology	
NIPH 720	LUH 8965	ARC	6-4	X (II)	2	2	-	No reactivity	7	21	11	18	22	12	24	6	6	25	6	Bronchial secretion	7/1997	České Budějovice	Paediatrics ICU	
NIPH 732	LUH 8966	ARC	6-4	X (II)	2	2	-	No reactivity	7	20	10	18	22	11	24	6	6	23	6	Bronchial secretion	9/1997	Český Krumlov	ICU	
NIPH 1362	LUH 7855 = CCM 7118	REC	4-2	XI	2	2			17	21	22	17	18	6	13	7	6	19	8	Tracheal aspirate	1/2000	Praha 3	Surgery ICU	
NIPH 1462	LUH 7856	REC	2-2	II	2	2			23	24	24	26	13	24	32	12	16	31	6	Sputum	1/2001	Tábor	ICU	
NIPH 1469	LUH 7858	REC	4-2	XI	2	2			17	22	8	16	11	6	8	6	6	23	12	Sputum	1/2001	Praha 2	Surgery ICU	
NIPH 1511	LUH 8972	REC	2-5	XIII	2	2			6	20	21	15	10	7	23	8	9	6	6	Drainage fluid	3/2001	Praha 4	Surgery ICU	
NIPH 1523	LUH 8974	REC	6-4	X (II)	2	2			6	20	10	17	23	12	25	6	6	6	6	Sputum	4/2001	Havlíčkův Brod	ICU	
NIPH 1526	LUH 7863	REC	2-2	II	2	2			7	19	20	17	10	21	31	10	14	21	6	Wound swab	4/2001	Blansko		
NIPH 1567	LUH 8975	REC	2-2	II	2	2			6	21	21	17	11	23	30	13	14	6	6	Blood	1/2001	Jihlava	Surgery	
NIPH 1628	LUH 8405	REC	2-4	II	2	2			16	21	22	17	12	12	25	7	7	8	6	Blood	9/2001	Praha 1	ICU	
NIPH 1629	LUH 7867	REC	2-5	XIII	2	2			8	20	21	16	10	6	24	8	8	6	6	Blood	9/2001	Praha 1	ICU	
NIPH 1696	LUH 8978	REC	2-2	II	2	2			7	19	21	16	13	14	24	8	8	12	6	Urine	6/2001	Praha 3	Surgery ICU	
NIPH 1711	LUH 7870	REC	4-2	II	2	2			17	23	23	17	23	6	22	9	6	27	9	Nasal swab	7/2001	Praha 3	ICU	
RUH 134	NIPH 528	NWE	2-2	II	2	1	-	S48-3-17	8	21	22	19	12	20	30	9	22	6	6	Urine	1982	Rotterdam (NL)	ICU	
RUH 3240	NIPH 537 = GNU 1086	NWE	4-2	XI	2	2	-	No reactivity	7	17	22	14	18	20	33	10	23	11	9	Respiratory tract	1989	Newcastle (UK)	ICU	
RUH 3422	NIPH 538 = PGS 189	NWE	2-2	II	2	2	-	S48-3-17	22	22	23	25	29	21	31	21	24	22	6	Ulcer	1984	Odense (DK)	ICU	
RUH 3245	NIPH 539 = GNU 1080	NWE	2-2	II	2	9	+	S48-3-17	6	19	29	10	30	24	34	23	23	6	6	Urinary catheter	1989	Salisbury (UK)	Neurology	
Other multi-drug resistant strains																								
NIPH 47	LUH 4630	ARC	8-1	u	u	6	-	S48-3-17	6	8	21	18	27	20	27	18	25	6	7	Burn	12/1991	Praha 1	Burns unit	
NIPH 301	LUH 7852	ARC	2-7	u	6	6	-	No reactivity	6	14	20	12	20	16	28	12	6	6	9	Sputum	6/1994	Slaný	ICU	
NIPH 335	LUH 4641	ARC	21-16	u	5	9	-	No reactivity	9	10	23	26	23	21	28	17	6	6	7	Sputum	7/1994	Tábor	Nursing home	
NIPH 1445	LUH 8403	REC	21-16	u	5	9			9	11	25	27	14	21	10	9	8	6	6	Sputum	7/2000	Plzeň	ICU	
NIPH 1497	LUH 7859	REC	23-19	XIV	4	6			6	11	22	12	7	18	31	10	11	19	12	Cerebrospinal fluid	3/2001	Praha 4	Infection ICU	
NIPH 1683	LUH 7869	REC	23-19	XIV	4	6			9	18	23	20	21	24	33	16	31	30	22	Blood	4/2001	Praha 3	Surgery	
NIPH 1717	LUH 7871	REC	2-6	u	6	6			15	19	20	17	19	18	31	14	9	6	10	Urine	7/2001	Praha 3	Surgery ICU	
NIPH 1734	LUH 8406	REC	24-20	u	u	nw			6	9	11	12	16	20	9	6	6	27	12	Sputum	11/2001	Mladá Boleslav	ICU	
Susceptible strains																								
NIPH 4	LUH 4704	ARC	10-8	u	u	5	-	No reactivity	23	22	24	26	27	23	28	22	26	22	16	Burn	2/1991	Praha 1	Burns unit	
NIPH 33	LUH 3789	ARC	11-9	u	7	9	-	No reactivity	23	22	22	24	30	24	28	24	25	7	19	Tracheostomy	10/1991	Praha 1	Burns unit	
NIPH 45	LUH 4705	ARC	12-10	u	8	6	-	No reactivity	22	21	22	25	28	21	27	22	25	22	18	Urinary catheter	11/1991	Praha 1	Burns unit	
NIPH 60	LUH 4631	ARC	9-1	u	u	9	-	No reactivity	22	21	22	24	26	21	27	20	25	24	17	Sputum	11/1992	Praha 1	Medical 2	
NIPH 67	LUH 4707	ARC	13-11	u	u	1	-	No reactivity	22	22	23	25	26	20	29	19	23	19	16	Tracheostomy	11/1992	Praha 1	Burns unit ICU	
NIPH 70	LUH 4708	ARC	14-9	u	u	9	-	No reactivity	21	21	22	24	27	19	26	19	23	21	18	Tracheostomy	11/1992	Praha 1	Burns unit ICU	
NIPH 80	LUH 4709	ARC	15-12	u	7	9	-	S48-3-17	23	21	23	25	29	19	28	19	21	6	16	Intravenous cannula	1/1993	Praha 1	Surgery ICU	
NIPH 81	LUH 4710	ARC	16-11	u	8	6	-	No reactivity	20	20	21	23	26	20	28	20	23	22	17	Wound swab	1/1993	Praha 1	Plastic surgery	
NIPH 143	LUH 4632	ARC	17-13	u	u	11	-	S53-25	23	22	23	26	28	20	29	19	22	20	9	Throat swab	6/1993	Praha 1	Paediatrics	
NIPH 190	LUH 4633	ARC	18-13	u	u	8	-	No reactivity	22	22	22	25	29	23	29	24	26	24	17	Tracheostomy	11/1993	Praha 1	Burns unit ICU	
NIPH 201	LUH 4711	ARC	19-14	u	u	6	-	No reactivity	23	22	24	26	28	22	29	21	24	26	18	Nasal swab	7/1992	Liberec	ICU	
NIPH 329	LUH 4718	ARC	20-15	u	u	2	-	S53-32	19	20	21	23	26	20	29	19	23	22	15	Tracheostomy	7/1994	Tábor	ICU	
NIPH 410	LUH 4722	ARC	7-1	u	u	11	-	S53-32	22	22	23	26	28	23	29	23	24	21	19	Cannula	4/1996	Brno	Paediatrics ICU	
NIPH 601	LUH 4725	ARC	22-17	u	u	13	-	No reactivity	23	22	23	26	28	22	28	21	24	23	18	Urine	11/1993	Praha 1	Medical 2	
NIPH 615	LUH 4727	ARC	14-18	u	u	15	-	No reactivity	23	22	22	25	28	22	28	22	24	20	20	Tracheostomy	1/1994	Praha 1	Burns unit ICU	

* Highly similar ribotypes are indicated in parentheses; u, unique pattern.

** AFLP clusters defined at a clustering level of 83 %; u, ungrouped pattern.

† Biotypes according to Bouvet & Grimont (1987); ng, strain did not grow on mineral media; nw, new biotype.

†† Presence (+)/absence (-) of plasmid pAN1 (8.7 kb) (Nemec *et al.*, 1999).

‡ Twenty monoclonal antibodies against O-antigens tested (Pantophlet *et al.*, 2001).

‡‡ Abbreviations: Ge, gentamicin; To, tobramycin; Am, amikacin; Ne, netilmicin; AS, ampicillin/sulbactam; Cz, ceftazidime; Im, imipenem; Pi, piperacillin; Of, ofloxacin; ST, co-trimoxazole; Te, tetracycline. The interpretative cut-off values for resistance are indicated.

§ Different hospitals in the same city are numbered