

**Supplemental Table 1.** Bacterial strains and PCR primers used in this study.

Target	Primers	Sequence	Reference
<i>bexA</i>	HI-1	CGTTTGTATGATGTTGATCCAGAC	(1)
	HI-2	TGTCCATGTCTTCAAAAATGATG	(1)
<i>pepN</i>	pepN-F	GATGGTCGCCATTGGGTGG	(2)
	pepN-R	GATCTGCGGTTGGCGGTGTGG	(2)
<i>iga</i>	iga_F	GTTCCACCACCTGCGCCTGCTAC	(3)
	iga_R	GTTATATTGCCCTCGTTATTCA	(3)
<i>fucK</i>	fucK_F	ACCACTTTCGGCGTGGATGG	(4)
	fucK_R	AAGATTTCCCAGGTGCCAGA	(4)
<i>lic1A</i>	lic1A_F	AGCTAACCGAGCTTGGGTAAAA	(5)
	lic1A_R	AAATCATTGTGGCACGGACG	(5)
PCR for <i>licA</i> gene mutants	JL_R2866_1107_L1	CCACTAGTTCTAGAGCGGCTGGAGGAAAAAGGAATGGAA	(6)
	JL_R2866_1107_L2	AGGCTGCTGCTAAAAATGAT	(6)
Control primer <i>licA</i> gene	JL_R2866_1107_C	TGGAGTTTGATTGATTGATTGA	(6)
Control primer Kan <sup>r</sup> cassette	HBKanR3	ATCCACATCGGCCAGATCGT	(7)
<b>Bacterial strain name</b>			
		<b>Type</b>	<b>Reference</b>
RIVM_044, RIVM_045, RIVM_046, RIVM_047, RIVM_048, RIVM_049, RIVM_050, RIVM_051, RIVM_052, RIVM_054, RIVM_055, RIVM_056, RIVM_057, RIVM_058, RIVM_060, RIVM_061, RIVM_062, RIVM_063, RIVM_064, RIVM_65		Oropharyngeal swabs	(8)
CWZ_003, CWZ_004, CWZ_005, CWZ_006, CWZ_007, CWZ_008, CWZ_009, CWZ_012, CWZ_013, CWZ_015, CWZ_016, CWZ_017, CWZ_021, CWZ_022, CWZ_033, CWZ_036, CWZ_053, CWZ_054, Radboud_003, Radboud_004, Radboud_005, Radboud_006		Blood cultures	This study
R2866Δ <i>licA</i> / <i>galE</i>		R2866 with <i>licA</i> gene replaced by Kan <sup>r</sup> cassette and <i>galE</i> gene replaced by Spec <sup>r</sup> cassette	(6)
CWZ_012Δ <i>licA</i>		CWZ_012 with <i>licA</i> gene replaced by Kan <sup>r</sup> cassette	This study
CWZ_016Δ <i>licA</i>		CWZ_016 with <i>licA</i> gene replaced by Kan <sup>r</sup> cassette	This study

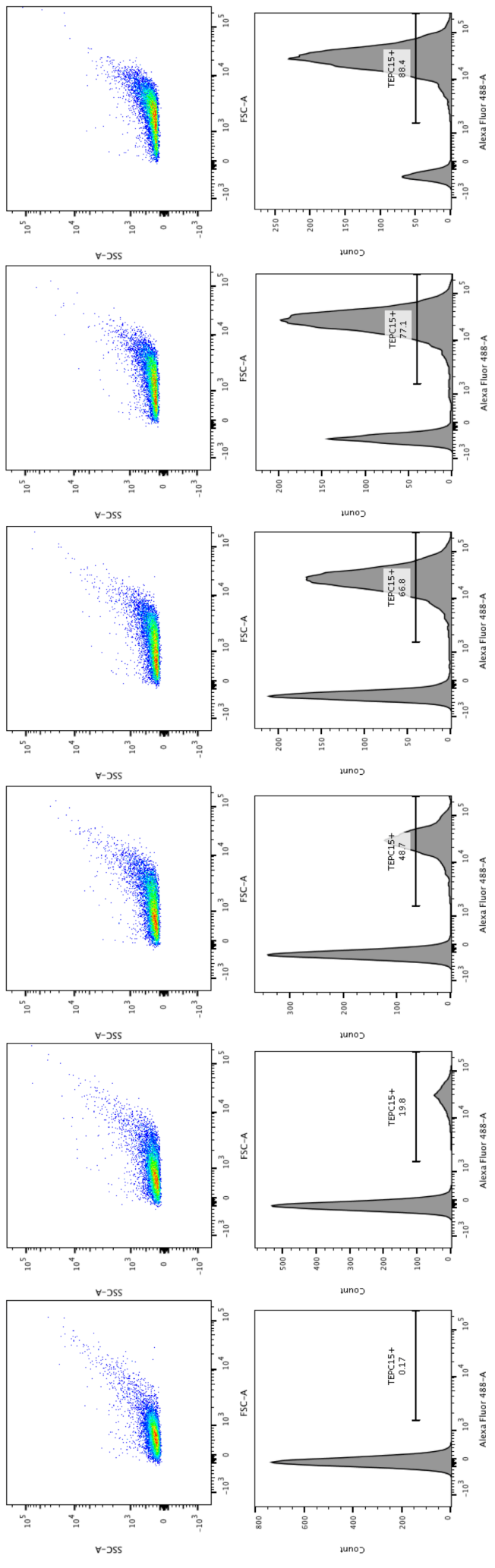
**References**

1. **Falla TJ, Crook DW, Brophy LN, Maskell D, Kroll JS, Moxon ER.** 1994. PCR for capsular typing of *Haemophilus influenzae*. *J Clin Microbiol* **32**:2382-2386.
2. **Ecevit IZ, McCrea KW, Pettigrew MM, Sen A, Marrs CF, Gilsdorf JR.** 2004. Prevalence of the *hifBC*, *hmw1A*, *hmw2A*, *hmwC*, and *hia* Genes in *Haemophilus influenzae* Isolates. *J Clin Microbiol* **42**:3065-3072.
3. **Vitovski S, Dunkin KT, Howard AJ, Sayers JR.** 2002. Nontypeable *Haemophilus influenzae* in carriage and disease: a difference in IgA1 protease activity levels. *JAMA* **287**:1699-1705.
4. **Meats E, Feil EJ, Stringer S, Cody AJ, Goldstein R, Kroll JS, Popovic T, Spratt BG.** 2003. Characterization of encapsulated and nonencapsulated *Haemophilus influenzae* and determination of phylogenetic relationships by multilocus sequence typing. *J Clin Microbiol* **41**:1623-1636.

5. **Clark SE, Eichelberger KR, Weiser JN.** 2013. Evasion of killing by human antibody and complement through multiple variations in the surface oligosaccharide of *Haemophilus influenzae*. *Mol Microbiol* **88**:603-618.
6. **Langereis JD, de Jonge MI, Weiser JN.** 2014. Binding of human factor H to outer membrane protein P5 of non-typeable *Haemophilus influenzae* contributes to complement resistance. *Mol Microbiol* **94**:89-106.
7. **Langereis JD, Stol K, Schweda EK, Twelkmeyer B, Bootsma HJ, de Vries SP, Burghout P, Diavatopoulos DA, Hermans PW.** 2012. Modified lipooligosaccharide structure protects nontypeable *Haemophilus influenzae* from IgM-mediated complement killing in experimental otitis media. *MBio* **3**:e00079-00012.
8. **van Beek J, Veenhoven RH, Bruin JP, van Boxtel RAJ, de Lange MMA, Meijer A, Sanders EAM, Rots NY, Luytjes W.** 2017. Influenza-like Illness Incidence Is Not Reduced by Influenza Vaccination in a Cohort of Older Adults, Despite Effectively Reducing Laboratory-Confirmed Influenza Virus Infections. *J Infect Dis* **216**:415-424.

**Supplemental Table 2. Patient characteristics.**

Strain name	Type	Collection year	Age	Gender	Acute presentation	Malignancy	Other disease or treatment
RIVM_044	Oropharyngeal swab	2012	73	M			
RIVM_045	Oropharyngeal swab	2012	66	F			
RIVM_046	Oropharyngeal swab	2012	77	M			Pneumocystis
RIVM_047	Oropharyngeal swab	2012	68	M			Cardio-vascular disease (heart attack 2010)
RIVM_048	Oropharyngeal swab	2012	76	F			Cardio-vascular disease (stent placement 2006), asthma, glaucoma & macular degeneration
RIVM_049	Oropharyngeal swab	2013	71	F			Arthritis, dizziness
RIVM_050	Oropharyngeal swab	2012	73	F			
RIVM_051	Oropharyngeal swab	2013	62	F			
RIVM_052	Oropharyngeal swab	2012	61	F			
RIVM_054	Oropharyngeal swab	2013	70	M			Previous airway infection (November 2012)
RIVM_055	Oropharyngeal swab	2012	73	M			High cholesterol
RIVM_056	Oropharyngeal swab	2013	75	F			Breathlessness, possibly lung emphysema
RIVM_057	Oropharyngeal swab	2012	85	F			Hypertension, previous breast cancer, current skin cancer
RIVM_058	Oropharyngeal swab	2012	72	F			COPD
RIVM_060	Oropharyngeal swab	2012	63	M			
RIVM_061	Oropharyngeal swab	2012	72	M			Chronic sinusitis, polyps removed from intestine
RIVM_062	Oropharyngeal swab	2012	78	F			Diabetes type 2
RIVM_063	Oropharyngeal swab	2013	85	F			
RIVM_064	Oropharyngeal swab	2012	69	M			
RIVM_065	Oropharyngeal swab	2012	67	F	Pneumonia		Cardio-vascular disease
CWZ_003	Blood culture	2009	75	F	Pneumonia		Cardio-vascular disease
CWZ_004	Blood culture	2010	81	M	Pneumonia		Cardio-vascular disease
CWZ_005	Blood culture	2011	71	M		Colon carcinoma	Co-infection with <i>Streptococcus pneumoniae</i> , metastases in spleen, liver and lungs
CWZ_006	Blood culture	2009	62	M	Fever	Colon and bladder carcinoma	Chemotherapy
CWZ_007	Blood culture	2009	66	M	Pneumonia		
CWZ_008	Blood culture	2010	79	M	Pneumonia		COPD
CWZ_009	Blood culture	2009	70	M	Sepsis		Diabetes, cholangitis, co-infection with <i>Escherichia coli</i>
CWZ_012	Blood culture	2013	67	F	Pneumonia/sepsis		Liver disease, dilated bile ducts
CWZ_013	Blood culture	2014	69	F	Stent placement		Cholecystitis, and liver disease, co-infection with <i>Fusobacterium nucleatum</i>
CWZ_015	Blood culture	2012	55	M	Sepsis		COPD
CWZ_016	Blood culture	2012	71	M	Sepsis/meningitis		COPD
CWZ_017	Blood culture	2012	66	F	Exacerbation COPD, sepsis		COPD
CWZ_021	Blood culture	2012	77	M			COPD
CWZ_022	Blood culture	2013	63	M	Sepsis/meningitis		
CWZ_033	Blood culture	2016	73	F	Sepsis after hip surgery		Co-infection with <i>Pseudomonas aeruginosa</i> and <i>Staphylococcus aureus</i>
CWZ_036	Blood culture	2016	73	M		Non-Hodgkin B cell lymphoma	Cardiovascular disease, chemotherapy. Last chemotherapy 10 days prior to hospital admission
CWZ_053	Blood culture	2017	73	F	Meningo-encephalitis after acute otitis media	Non-Hodgkin B cell lymphoma	
CWZ_054	Blood culture	2017	86	M	Pneumonia/sepsis	Adenocarcinoma lung	
Radbound_003	Blood culture	2015	57	F	Influenza B virus + <i>H. influenzae</i> co-infection	Acute lymphocytic leukemia	COPD, latent <i>Mycobacterium tuberculosis</i>
Radbound_004	Blood culture	2015	66	F		Multiple myeloma	Oesophagus carcinoma
Radbound_005	Blood culture	2015	66	F	Fasciitis necroticans		Systemic Lupus Erythematosus
Radbound_006	Blood culture	2017	67	M	Viral + <i>Haemophilus influenzae</i> co-infection	Plasma cell leukemia	



**Supplemental figure 1.** PCho expression as determined by TEPC-15 flow cytometry. Strain H446 (PCho-) and strain H457 (PCho+) were mixed and PCho expression was determined by flow cytometry.