**Table S1.** Common lilac (*Syringa vulgaris* L.) samples used for developing the microsatellite markers. In the study set, shrubs with a putative name were assumed to represent a certain cultivar, unidentified or known, on the basis of morphological characters. Shrubs with sample number only were too diverse to be classified to a certain morphotype.

The study set

Sample Putative cultivar Type and color Origin

number or code name of flowers\*

1 K17 S, pinkish Viikki

2 Lemoinei D, lilac Annala

3 - S, lilac Annala

4 K4 S, white Kaupunginpuutarha

5 - S, lilac Annala

6 - S, violet Sammatinrinne

7 P7 S, violet Sammatinrinne

9 - S, white Kaupunginpuutarha

10 Mme Lemoine D, white Kaupunginpuutarha

11 M11 S, white Hesperianpuisto

12 M12 D, white Hesperianpuisto

13 Krasavitsa Moskvy D, white Hesperianpuisto

14 K4 S, white Hesperianpuisto

17 K17 S, pinkish Kaupunginpuutarha

18 - S, violet Sturenkatu

19 A19 S, bluish Annala

20 A20 S, purple Annala

21 Mme Lemoine D, white Annala

22 K22 S, violet Kaupunginpuutarha

23 Michel Buchner D, bluish Hesperianpuisto

24 Katherine Havemeyer D, lilac Hesperianpuisto

25 K25 S, purple Kaupunginpuutarha

26 Andenken an Ludwig Späth S, purple Kaupunginpuutarha

28 Michel Buchner D, lilac Mäkelänkatu

29 Belle de Nancy D, pinkish Mäkelänkatu

30 M30 S, lilac Mäkelänkatu

31 Michel Buchner D, lilac Esplanadi

32 - S, bluish Mäkelänkatu

33 K17 S, pinkish Mäkelänkatu

34 P27 S, lilac Mäkelänkatu

35 Andenken an Ludwig Späth S, violet Mäkelänkatu

36 M36 S, bluish Hesperianpuisto

37 Mme Lemoine D, white Temppeliaukio

38 E38 S, lilac Eiran puisto

39 - S, lilac Eiran puisto

40 Belle de Nancy D, pinkish Eiran puisto

41 - S, lilac Eiran puisto

42 - S, bluish Eiran puisto

43 Charles Joly D, purple Armfeltin puisto

44 Andenken an Ludwig Späth S, purple Armfeltin puisto

45 Andenken an Ludwig Späth S, purple Armfeltin puisto

46 Mme Lemoine, D, white Armfeltin puisto

49 - S, lilac Annala

50 P50 S, pinkish Puotila

51 P64 S, lilac Stansvikin kartano

52 Prince Notger S, bluish Stansvikin kartano

53 - S, white Stansvikin kartano

54 - S, lilac Stansvikin kartano

55 Michel Buchner D, bluish Matosaari

56 M56 S, lilac Matosaari

57 M57 S, lilac Matosaari

58 M58 S, white Matosaari

59 Prince Notger S, bluish Herttoniemen kartano

60 Prince Notger S, bluish Suomenlinna Pohjoinen

61 Prince Notger S, bluish Suomenlinna Piperin puisto

62 P64 S, lilac Pernon kartano

63 P64 S, lilac Pernon kartano

64 Andenken an Ludwig Späth S, purple Kaisaniemi

The reference samples

Sample Cultivar Accession Origin

number number

65 Andenken an Ludwig Späth 9450-37-1949 Montreal Botanical Garden

66 Etna 4808-39-1949 Montreal Botanical Garden

67 Hugo Koster 9441-37-1951 Montreal Botanical Garden

68 Katherine Havemeyer 5246-39-1944 Montreal Botanical Garden

69 Krasavitsa Moskvy 1938-77-1988 Montreal Botanical Garden

70 Marie Legraye 9443-37-1950 Montreal Botanical Garden

71 Marlyensis 1450-1957 Montreal Botanical Garden

72 Michel Buchner 1195-1989 Montreal Botanical Garden

73 Mme F. Morel 3514-39-1950 Montreal Botanical Garden

74 Mme Lemoine 9446-37-1950 Montreal Botanical Garden

75 Mont Blanc 3515-39-1950 Montreal Botanical Garden

76 Ruhm von Horstenstein 9440-37-1988 Montreal Botanical Garden

77 Andenken an Ludwig Späth 00ZZ-0489 Helsinki University Botanic Garden

78 Charles Joly 1995-0438 Helsinki University Botanic Garden

79 Amoena 00ZZ-0487 Helsinki University Botanic Garden

80 Charles Joly 4361-2 Arnold Arboretum

81 Prince Notger 3001-1 Arnold Arboretum

\*S, single flowers; D, double flowers; color was determined using the Royal Horticultural Society’s Colour Chart 2001 and classified similarly as in the International register and checklist of cultivar names in the genus *Syringa* L. (Oleaceae) (Vrugtman and Royal Botanical Gardens, 2012; available online at http://www.SyringaRegistry.info).

**Table S2.** Characteristics of the SSR repeats identified in common lilac (*Syringa vulgaris* L.).

Type of SSR Repeat class Frequency %

Di-nucleotide

 AG 16 33.3

 AC 10 20.8

 AT 3 6.3

Total di-nucleotide 29 60.4

Tri-nucleotide

 GGT 5 10.4

 CTT 4 8.3

 TAA 2 4.2

Total tri-nucleotide 11 22.9

Tetra/penta/hexa-nucleotide

 CAAC 1 2.1

 CACCTA 1 2.1

Total tetra/penta/hexa-nucleotide 2 4.2

Composite GA + GAA 1 2.1

 GA + GT 2 4.2

 GAA + GTA 1 2.1

 GGT + GTT 1 2.1

 TAA + TTA 1 2.1

Total composite 6 12.5

Total repeat motifs 48