

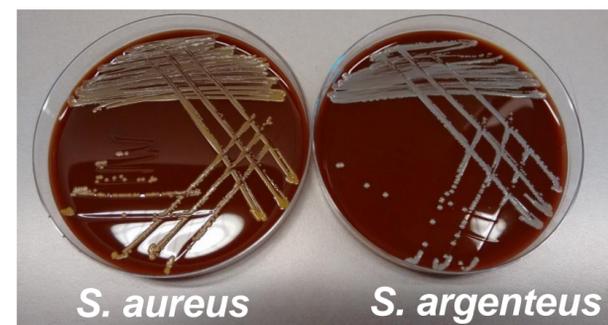
# LOW OCCURRENCE OF THE NEW SPECIES *Staphylococcus argenteus* IN A LARGE *Staphylococcus aureus* COLLECTION OF HUMAN ISOLATES FROM BELGIUM 2007-2015

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## BACKGROUND

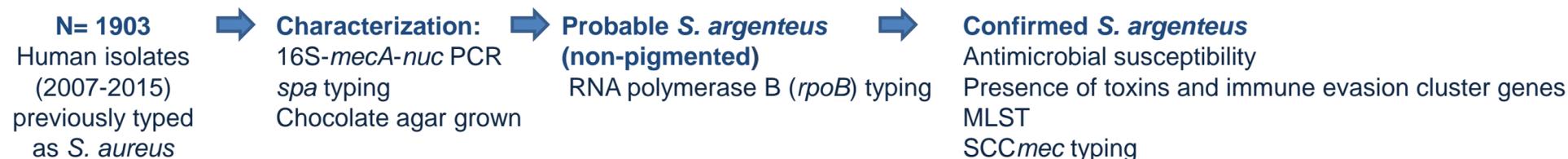
*Staphylococcus argenteus* is a novel *Staphylococcus* species closely related to *Staphylococcus aureus* that has recently been described. This species presents a non-pigmented phenotype on chocolate agar plates due to the lack of the genes encoding staphyloxanthin (**Figure 1**). Routine phenotypic and genotypic methods used for identification misclassify this novel species as *S. aureus*. Therefore, its prevalence and geographical distribution remain unknown. In this work, we have determined the human *S. argenteus* occurrence in Belgium by a retrospectively analysis of a *S. aureus* human collection.



**Figure 1.** *S. aureus* and *S. argenteus* phenotypes in blood agar.

## MATERIAL and METHODS

Retrospective analysis of two *S. aureus* collections [isolates (n=1650) from clinical laboratories (n=120) and isolates (n=253) from nasal samples collected from healthy children attending kindergartens (n=11)]



## RESULTS

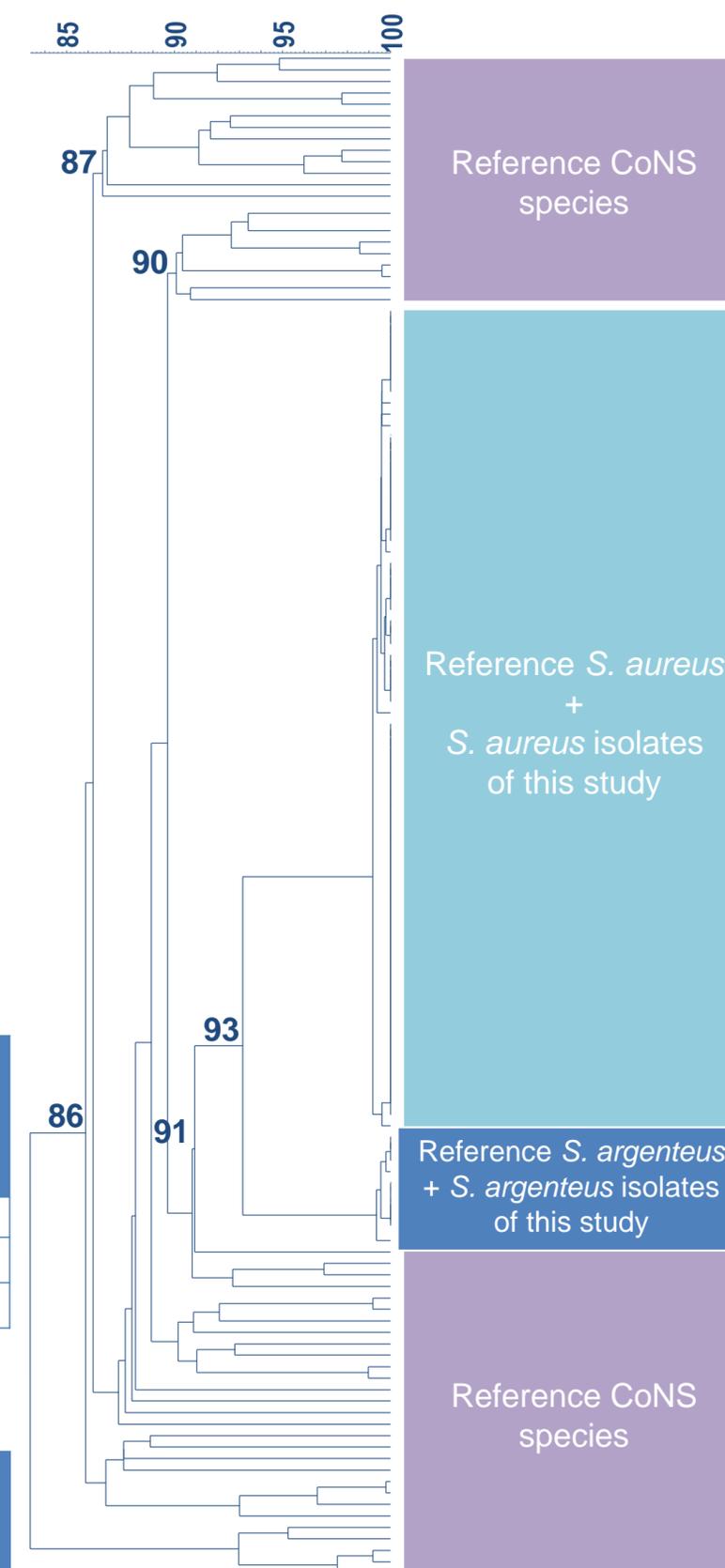
Seventy-three (3.8%) isolates were non-pigmented on chocolate agar plates, but most (n=70) were grouped with *S. aureus* control isolates by the *rpoB* typing (**Figure 2**). Only three isolates (0.16%) belonged to *S. argenteus* by *rpoB* sequence typing. These three isolates have different characteristics:

Strain	Source, isolation year	Carrier/ Patient age (years/sex)	City, centre	Antimicrobial resistance phenotype/genotype	Virulence genes	<i>spa</i> type	ST
HC-293	screening, 2007	5/UK	Brussels, K	PEN / <i>blaZ</i>	<i>sak, scn</i>	t5787	2250
NRC-2012S149	screening, 2012	67/M	Ghent, H	FOX-OXA-PEN / <i>blaZ, mecA</i> [SCC <i>mec</i> IV (2B)]	<i>sak, scn,</i>	t6675	2250
NRC-2014S151	wound, 2014	83/M	Bonheiden, H	FOX-OXA-PEN / <i>blaZ, mecA</i> [SCC <i>mec</i> IV (2B)]	<i>sak, scn, selk, selq</i>	t6675	3240

FOX, cefoxitin; H, Hospital; HC, healthy carrier; K, Kindergarten; M, male; NRC, National Reference Centre – *Staphylococcus aureus*; OXA, oxacillin; PEN, penicillin; ST, sequence type; UK, unknown.

## CONCLUSIONS

This study represents the first occurrence study of this new species in a European country. Although its frequency in Belgium seems low, it is to note that the first isolate was recovered in 2007. Further studies are needed to determine the true prevalence and the geographical distribution of this new species.



**Figure 2.** UPGMA tree based on *rpoB* typing