

## Genomic insights into a foodborne outbreak of Group B Streptococcus infection in Singapore – and beyond

Swaine Chen  
National University of Singapore  
Genome Institute of Singapore  
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### Key questions

- Is this really foodborne?
- Extent of ST283?
- Why is ST283 causing disease?



[http://media7.tenor.com/7f/46g21884bda7019b000041f/wander\\_image\\_4a.jpg](http://media7.tenor.com/7f/46g21884bda7019b000041f/wander_image_4a.jpg)

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### WGS data

- 157 Human isolates
  - 144 from Singapore (2012-2015)
  - 9 from Hong Kong (1998-2007)
  - 4 from Thailand (2015)
- 88 Fish isolates from Singapore
  - 12 from point of import (2015)
  - 76 from wholesale or retail (2015)

Kalamuddin et al. 2017 *CD* 44(2):5145-52  
Chen et al. 2017 *PLoS* 12(12):e0183117

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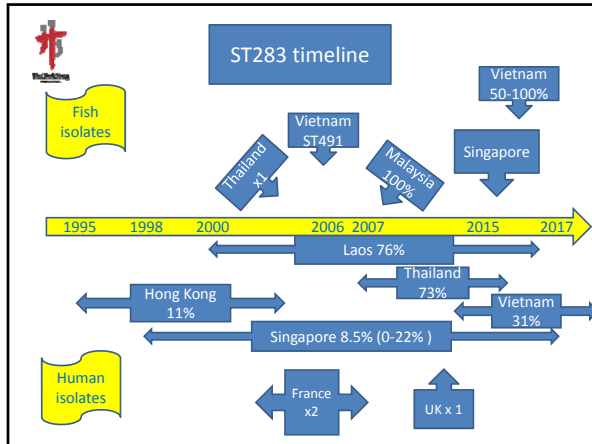
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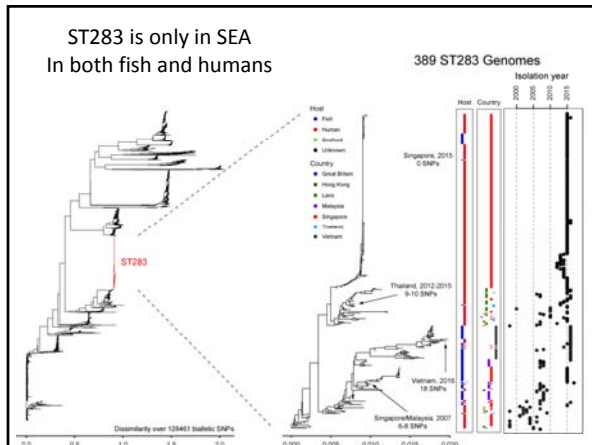
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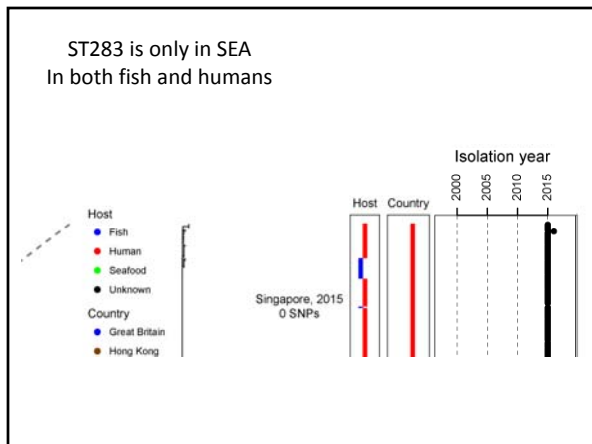
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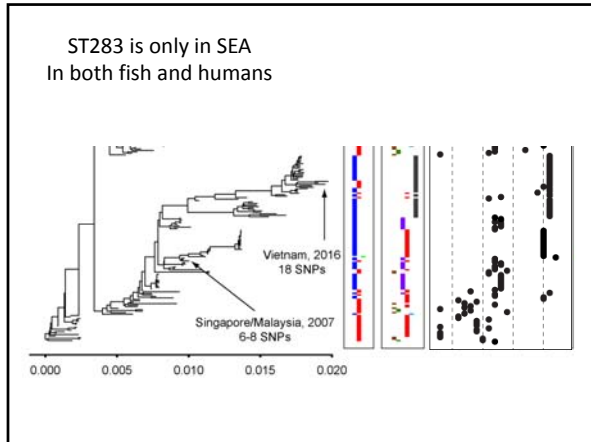
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### 2015 GBS outbreak

- Is this really foodborne?
  - Identical strain
  - Epidemiology
- Extent of ST283?
  - Throughout SE Asia
  - 1984, rapidly expanding
- Why is ST283 causing disease?
  - Ongoing!

http://medRxiv.org/content/10.1101/2015.09.24.15020001v1.full.pdf

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### GBS ST283 in SEA: An unrecognized regional problem

- GBS can be foodborne
- GBS infects healthy adults
- Adult is 90% of GBS
- ST283 is >50% of adult
- SEAsia at high risk
  - Culture, Food
  - Disproportionately LMIC
  - Food security
  - Fish exports
  - Economic development

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### Data / Partners

- Tim Barkham (TTSH), Ruth Zadoks (Glasgow, Moredun)
- Ng Lee Ching (NEA/EHI); Paul Chiew (AVA)
- Shirin Kalimuddin, Koh Tse Hsien (SGH)
- Kurosh Meher Shahi (NUS); Li Yang Hsu (SID)
- Margaret Ip (CUHK); Anucha Apisarnthanarak (Thammasat U)
- Singapore GBS Working Group
- Nicola Jones, Anna Sheppard (Oxford); Toni Whistler (US CDC)
- Victoria Chalker (PHE); Amal Azmal (U Putra Malaysia)
- David Dance, Paul Turner (MORU)
- Stephen Baker, Guy Thwaites, Rogier van Doorn (OCRU)
- GIS GTB, Polaris, A\*STAR

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### GBS in Southeast Asia GBS in fish, food, and people

We are looking for samples!  
We can help sequence and analyze

Please contact us:  
[sichen@gis.a-star.edu.sg](mailto:sichen@gis.a-star.edu.sg)  
[timothy\\_barkham@ttsh.com.sg](mailto:timothy_barkham@ttsh.com.sg)

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