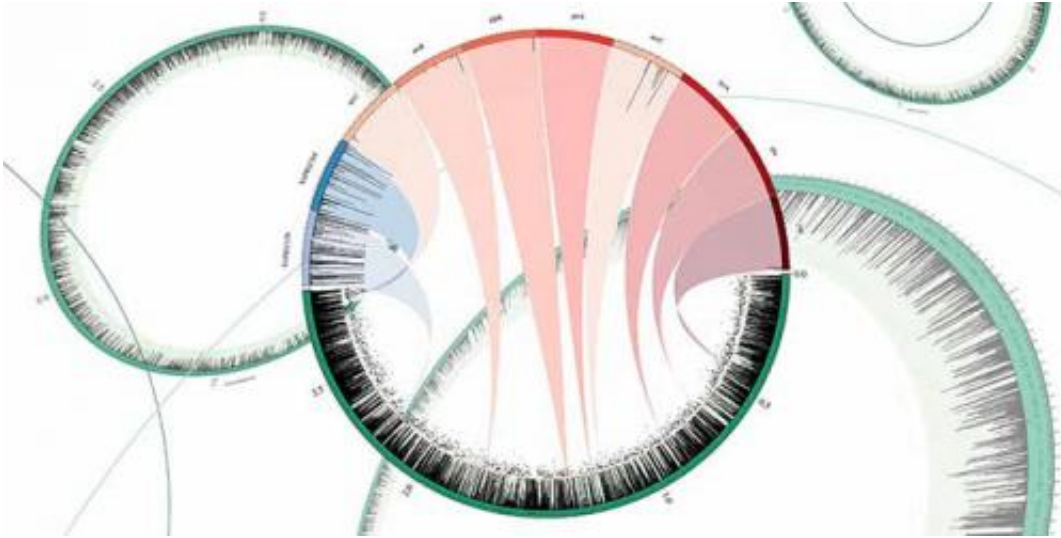


New methods to identify MRSA in pigs

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Traditionally, MRSA has been associated with severe infections which occur in hospitals and result in prolonged diseases and increased mortality. However, in recent years, MRSA has spread to the rest of the community, e.g. MRSA CC398 is found in pig production.

MRSA is resistant to the antibiotics with which we normally use for treatment of *Staphylococcus* infections.

In her PhD project at the National Food Institute, PhD student Mette Theilgaard exploited the latest technologies within whole genome sequencing and studied the entire DNA of MRSA CC398.

These studies have resulted in new methods, high-throughput approaches, which can identify genes important for the survival of MRSA in pigs. High-throughput approaches can identify those genes in the total gene pool of the [bacteria](#) which are essential, or the presence of which is advantageous, for the bacteria under some given circumstances.

Transfer of Disease From Animals To Humans

The fact that MRSA can spread from [animals](#) to humans, where they may result in infections, has caused great concern in recent years. LA-MRSA ST398 is a new type and has turned out to be particularly successful in colonisation of pigs, from where it may transmit to humans.

Therefore, several monitoring studies focus on locating the origin of this MRSA type and its potential. Several central questions still remain unanswered, which makes it difficult to control the spread of this MRSA type. LA-MRSA ST398 is zoonotic, i.e. it can be transferred directly from animals to humans and cause disease. Thus, it is not sufficient to eradicate the bacteria from humans.

LA-MRSA ST398 has proven to be particularly successful in colonisation of pigs. By studying which genes are essential for the bacteria in pigs it may be possible for researchers to identify the factors important for the bacterium to colonise on [pigs](#). We still don't know which specific genetic factors in this MRSA type facilitate the spread from animals to humans.

More information: Read Mette Theilgaard's PhD thesis (PDF): www.food.dtu.dk/~media/Institutioner/Pub-2014/Phd%20afhandling%20Mette%20Theilgaard%20Christiansen.ashx

Provided by Technical University of Denmark

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