

Salmonella enterica: The Cell Hacker (Disease Cycle Illustrations)

MEDIA ALERT: Graphics available for high impact news content



UC Santa Barbara researchers [Michael Mahan](#) and Douglas Heithoff have discovered *Salmonella* bacteria strains that are 100 times more capable of causing disease--meaning they can cause severe illness or mortality at 1/100th of the concentration of typical *Salmonella* bacteria strain. Their findings may help prevent food poisoning outbreaks that continue to plague public health and the food industry at a cost of billions of dollars annually in the U.S.

The following illustrations are available to members of the press who wish to pursue a story about this research. Any and all parts of the illustrations are available individually (e.g. If you wish to use just the *Salmonella* image, or just the "Trojan Horse" image). **Please contact Melissa Van De Werfhorst, Marketing Manager, at melissa@engineering.ucsb.edu or (805) 893-4301.**

Poster: Disease cycle of new hypervirulent strains of *Salmonella*, PLUS warning signs and fighting back by UCSB researchers. (Click for web-resolution image. Print resolution is available--please contact us.)



Image: Disease cycle of new hypervirulent strains of *Salmonella* bacteria (Click for web-resolution image. Print resolution is available--please contact us.)



Image: Warning Signs & Fighting Back (Click for web-resolution image. Print resolution is available--please contact us.)



Image: Salmonella "Trojan Horse" (Click for web-resolution image. Print resolution is available--please contact us.)



Additional Information:

These strains are particularly insidious because they have evolved the ability to turn off the host's immune response and septic shock warning system, effectively spreading unnoticed and creating elevated levels of toxin throughout the body for three days before any symptoms manifest. The researchers discovered this strain among livestock animals that were dying at increased rates that were both alarming and mysterious.

Their discovery presents a tremendous risk to human food safety, according to the researchers, if immediate preventative action isn't taken. Their recommendations include a widescale evaluation of improper administration of vaccines and antibiotics in livestock, and also engineering new, more 'intelligent' vaccines.

Heithoff and Mahan are currently working on a cross-protective vaccine that wipes out several virulent strains of *Salmonella*. Furthermore, they believe their findings and new vaccine development will be applicable not just to *Salmonella*, but to other infectious microbes.

Further reading: A news release from earlier this year is available for review at [UCSB Public Affairs](#).

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