



## TECHNOLOGY

# Live Attenuated Salmonella Paratyphi A Vaccine

## OVERVIEW

With the emergence of antibiotic resistant strains and increase in frequency of enteric fever caused by *Salmonella enterica* serovar Paratyphi A, there is a critical need for a prophylactic vaccine, as none is currently available. Typhoid fever and paratyphoid fever are clinically indistinguishable, patients having a rash and fever which can lead to severe complications if untreated. Of the two current commercial vaccines for typhoid fever, one may provide moderate cross protection for paratyphoid B and the other lacks cross protection altogether. The Centers for Disease Control estimates 6 million cases of paratyphoid fever occur annually throughout the world, and the highest risk of acquiring a multi-drug resistant infection is in South Asia. In order to develop a vaccine specifically against paratyphoid A fever, researchers at UMB's Center for Vaccine Development have engineered *S. Paratyphi A* strains with independent attenuating genetic mutations proven to be safe and immunogenic in preclinical tests. One such strain, CVD 1902, is currently being tested in a Phase 1 clinical trial.

## APPLICATIONS

-Oral vaccine against paratyphoid A fever, for use by residents of and travelers to endemic areas. -CVD's attenuated strains also provide safe source of antigenic material and potentially high yield for production of conjugate vaccines.

## ADVANTAGES

-FIRST AVAILABLE vaccine against enteric fever caused by *S. Paratyphi A*. -Increasing need for vaccine given emergence of antibiotic resistance to *S. Paratyphi*. -Vaccine can be delivered orally rather than by injection, so it's likely to be more efficacious for an enteric disease and certainly easier to administer.

## STAGE OF DEVELOPMENT

Phase 1 clinical trial in progress.

## R&D REQUIRED

Completion of clinical development.

## LICENSING POTENTIAL

UMB seeks commercialization partner for advanced clinical development.

## CONTACT INFO

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## Additional Information

### INSTITUTION

University of Maryland, Baltimore

### PATENT STATUS

-U.S.Patent 8,475,810 issued 07/02/2013 -European Patent 1941024, France, Germany, UK, Spain issued 07/31/2013

### LICENSE STATUS

Available for licensing

### CATEGORIES

- Vaccine

### INVESTIGATOR(S)

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### ATTACHMENTS

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