

# Salmonella bongori provides insights into the evolution of the salmonellae

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The genus *Salmonella* contains two species, *S. bongori* and *S. enterica*. Compared to the well-studied *S. enterica* there is a marked lack of information regarding the genetic makeup and diversity of *S. bongori*. *S. bongori* has been found predominantly associated with cold-blooded animals, but it can infect humans. To define the phylogeny of this species, and compare it to *S. enterica*, we have sequenced 28 isolates representing most of the known diversity of *S. bongori*. This cross-species analysis allowed us to confidently differentiate ancestral functions from those acquired following speciation, which include both metabolic and virulence-associated capacities. We show that, although *S. bongori* inherited a basic set of *Salmonella* common virulence functions, it has subsequently elaborated on this in a different direction to *S. enterica*. It is an established feature of *S. enterica* evolution that the acquisition of the type III secretion systems (T3SS-1 and T3SS-2) has been followed by the se