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Phosphorylation residue T175 in RsbR protein is required for efficient induction of sigma B factor and survival of *Listeria monocytogenes* under acidic stress

Key words: *Listeria monocytogenes*, RsbR, Sigma B (Sig B) factor, Phosphorylation

- Listeria monocytogenes is an important zoonotic foodborne pathogen that can tolerate a number of environmental stresses.
- RsbR is an upstream regulator of the SigB factor, and is thought to sense environmental challenges and trigger the SigB pathway.
- In Bacillus subtilis, two phosphorylation sites in RsbR are involved in the SigB pathway.



rsbR significantly affected growth and survival under acidic conditions

 Residue T175 makes a major contribution to RsbR function in *listerial* survival under acidic stress



• Deletion of *rsbR* led to a significant reduction in SigB expression both inat the mRNA and protein levels

•RsbR-T175 (M1 or M3), but not T209 (M2), involved in regulating SigB expression.



- RsbR has effect on SigB expression in acid stress.
- RsbR-T175 is required to trigger induction of SigB expression in response to acidic stress for improved survival