

Genes identified in literature to be involved in acid resistance annotated with the literature sources

# Validation set composed from literature which contains genes involved in acid resistance

# Based on:

# Ecocyc

# Small, 1994, Acid and base resistance in *Escherichia coli* and *Shigella flexneri*: role of *rpoS* and growth pH.

# Hersh, 1996, A glutamate-dependent acid resistance gene in *Escherichia coli*.

# Castanie-Cornet, 1999, Control of acid resistance in *Escherichia coli*.

# Kirkpatrick, 2001, Acetate and Formate Stress : Opposite Responses in the Proteome of *Escherichia coli*

# Boot, 2002, Sensing and adapting to acid stress

# Stancik, 2002, pH-Dependent Expression of Periplasmic Proteins and Amino Acid Catabolism in *Escherichia coli*

# Masuda, 2003, Regulatory network of acid resistance gene in *Escherichia coli*.

# Foster, 2004, *Escherichia coli* acid resistance: tales of an amateur acidophile

# Sun, 2011, ATP requirement for acidic resistance in *Escherichia coli*.

# Johnson, 2011, RcsB is required for inducible acid resistance in *Escherichia coli* and acts at *gadE*-dependent and

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# Global regulators involved in acid resistance

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# HNS regulates the *hdeAB* chaperones (Boot, 2002)

# Boot, 2002; Sun, 2011

*hns*

# *rpoS* regulates the *hdeAB* chaperones (Boot, 2002), *rpoS* is involved in transcription of *gadX* (Foster, 2004)

# Boot, 2002; Foster, 2004; Small, 1994; Castanie-Cornet, 1999; Hersh, 1996

*rpoS*

# *crp* affects growth in acidic conditions through arginine based protection (Boot, 2002), inhibits *rpoS* production

# Boot, 2002; Foster, 2004; Castanie-Cornet, 1999

*crp*

# *cya* affects growth in acidic conditions through arginine based protection (Boot, 2002)

# Boot, 2002

*cya*

# *fur* has been implicated as a regulator of acid survival (Boot, 2002)

# Boot, 2002

*fur*

# *rpod* is involved in transcriptional regulation of *gadA/BC* (Foster, 2004)

# Foster, 2004

*rpod*

# *mnmE/trmE* is involved in *gadE* mRNA production and stimulates translation of *gadAB* mRNA (Foster, 2004)

# Foster, 2004

*mnme*

# *TorR* is a negative regulator of *gadE* (Foster, 2004)

# Foster, 2004