

# Role of non-coding regulatory RNA in the virulence of human pathogenic vibrios

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In recent decades, the identification of small non-coding RNAs in bacteria has revealed an important regulatory mechanism of gene expression involved in the response to environmental signals and to the control of virulence. In the family Vibrionaceae, which includes several human and animal pathogens, small non-coding RNAs (sRNAs) are closely related to important processes including metabolism, quorum sensing, virulence, and fitness. Studies conducted in silico and experiments using microarrays and high-throughput RNA sequencing have led to the discovery of an unexpected number of sRNAs in Vibrios. The present review discusses the most relevant reports regarding the mechanisms of action of sRNAs and their implications in the virulence of the main human pathogens in the family Vibrionaceae: *Vibrio parahaemolyticus*, *V. vulnificus* and *V. cholerae*. © 2017

Pérez-Reytor, Plaza, Espejo, Navarrete, Bastías and Garcia.

Bioinformatics analysis

Pathogenic vibrios

Quorum sensing

SRNA

*Vibrio cholerae*

*Vibrio parahaemolyticus*

*Vibrio vulnificus*

Virulence

bacterial protein

bacterial RNA

chaperone

Hfq protein

RyhB RNA

small untranslated RNA

Spot 42 RNA

ToxT activated RNA A

ToxT activated RNA B

unclassified drug

Vibrio regulatory RNA of OmpA

5' untranslated region

bacterial gene

bacterial metabolism

bacterial virulence

bioinformatics

CRISPR Cas system

gene control

gene expression

gene sequence

genetic transcription

human

iron metabolism

nonhuman

quorum sensing

Review

Vibrio

*Vibrio cholerae*

*Vibrio parahaemolyticus*

*Vibrio vulnificus*