

# Accepted Manuscript

Optogenetic manipulation of ENS - The brain in the gut

Wei Wang



PII: S0024-3205(17)30587-8  
DOI: doi:[10.1016/j.lfs.2017.11.010](https://doi.org/10.1016/j.lfs.2017.11.010)  
Reference: LFS 15422  
To appear in: *Life Sciences*  
Received date: 11 July 2017  
Revised date: 25 October 2017  
Accepted date: 7 November 2017

Please cite this article as: Wei Wang , Optogenetic manipulation of ENS - The brain in the gut. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Lfs(2017), doi:[10.1016/j.lfs.2017.11.010](https://doi.org/10.1016/j.lfs.2017.11.010)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**Optogenetic manipulation of ENS -- the brain in the Gut**

Wei Wang

School of Biological Science and Biotechnology, Minnan Normal University,

Zhangzhou, 363000, China

Corresponding Author: Wei Wang

Email: wangwei0596@163.com

**Abstract:**

Optogenetics has emerged as an important tool in neuroscience, especially in central nervous system research. It allows for the study of the brain's highly complex network with high temporal and spatial resolution. The enteric nervous system (ENS), the brain in the gut, plays critical roles for life. Although advanced progress has been made, the neural circuits of the ENS remain only partly understood because the appropriate research tools are lacking. In this review, I highlight the potential application of optogenetics in ENS research. Firstly, I describe the development of optogenetics with focusing on its three main components. I discuss the applications *in vitro* and *in vivo*, and summarize current findings in the ENS research field obtained by optogenetics. Finally, the challenges for the application of optogenetics to the ENS research will be discussed.

**Keywords:** Enteric neurons; Gut; Gastrointestinal tract; Optogenetics; ChR2

Download English Version:

<https://daneshyari.com/en/article/8535854>

Download Persian Version:

<https://daneshyari.com/article/8535854>

[Daneshyari.com](https://daneshyari.com)