# The influence mechanism of molecular structure on peak current and peak potential in electrochemical detection of typical quinolone antibiotics

Jiawei Li, [a,c,d] Qiang Xue,* [a,b] Tao Chen, [a,b] Fei Liu,[a,b] Qun Wang,[a,b] Chunwen Chang, [a,b] Xiaohua Lu,[e] Taogeng Zhou,[f] Osamu Niwa,[g]

[a].*MOE Key Laboratory of Groundwater Circulation and Environmental Evolution, China University of Geosciences (Beijing), Beijing 100083, P.R. China*

[b] *Beijing Key Laboratory of Water Resources and Environmental Engineering, School of Water Resources and Environment, China University of Geosciences (Beijing), Beijing 100083, PR China.*

[c] *Aerospace Seahawk Electromechanical Technology Research Institute Co., Ltd. 100074, Beijing,* China

[d] *Beijing Jinghang Institute of Computing and Communication, 100074, Beijing,* China

[e] *National Institute of Metrology, No. 18, Bei San Huan Dong Lu, 100022, Beijing, China*

[f] *Beijing Institute of Technology, No. 5, South Zhongguancun Street, 100081, Beijing, China*

[g] *Saitama Institute of Technology, 1690, Fusaiji, Fukaya, Saitama, 369-0293, Japan*

***Corresponding author: Qiang Xue**

E-mail: xueqiang@cugb.edu.cn

**Supplementary Material 1**

As shown in Figure S1, it is clear that there is a good linear fit between the peak current and scan rate (or square root of scan rate), indicating that it is a surface-confined process.

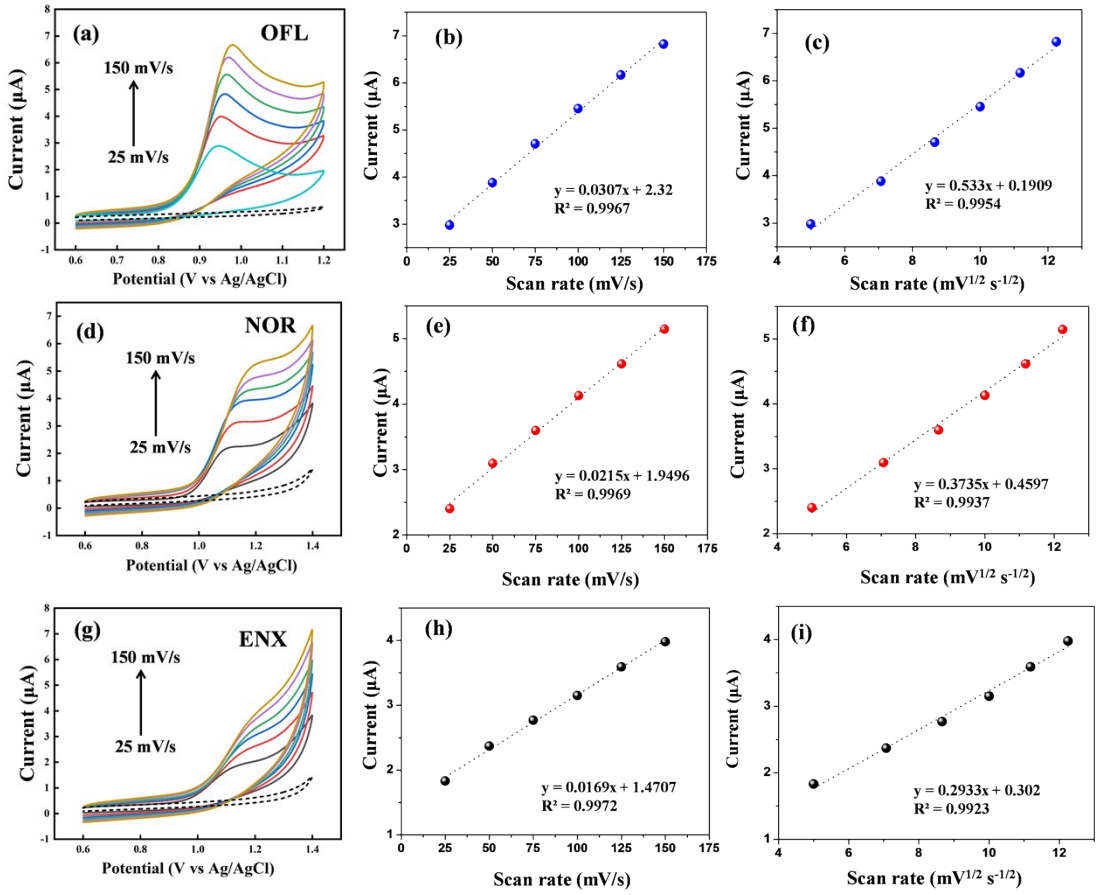


**Fig. S1** Effect of scan rate on the CV measurement of three antibiotics. (a-c) OFL, (d-f) NOR, (g-i) ENX. working electrode: GCE, 0.2 M PB solution (pH=7)

**Supplementary Material 2**

Figure S2 shows a schematic diagram of the molecular structures of three antibiotics (OFL, NOR and ENX) under different pH conditions.

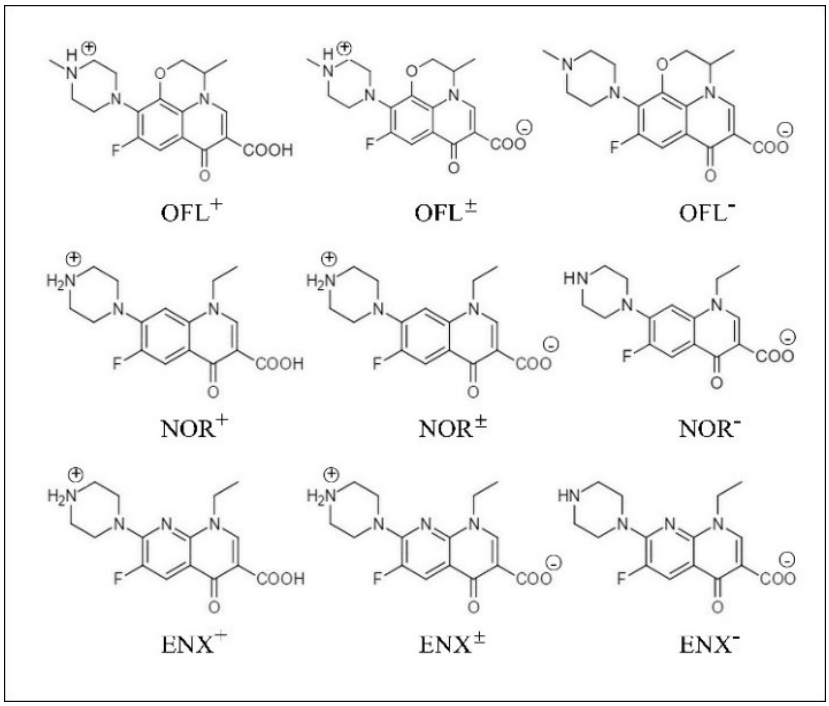


**Fig. S2** The diagrams of molecular structure of three antibiotics