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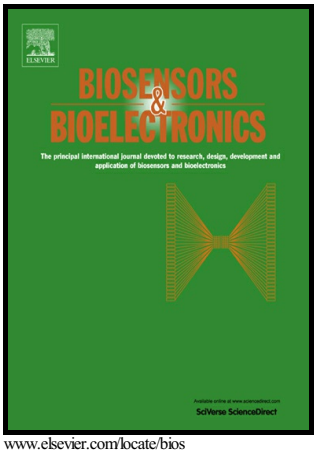

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Jeong Eun Hyeon [a, b], *Da Woon Jeong* [a], *Young Jin Ko* [a], *Seung Wook Kim* [c], *Chulhwan Park* [d], *and Sung Ok Han* [a,]*

[a] Department of Biotechnology, Korea University, Seoul 02841, Republic of Korea

[b] Institute of Life Sciences and Biotechnology, Korea University, Seoul 02841, Republic of Korea

[c] Department of Chemical and Biological Engineering, Korea University, Seoul 02841, Republic of Korea

[d] Department of Chemical Engineering, Kwangwoon University, Seoul 01897, Republic of Korea

***Correspondence to:**

Department of Biotechnology, Korea University, Seoul 02841, Republic of Korea. Tel: +82-2-3290-3151. Fax: +82-2-3290-3151. E-mail address: samhan@korea.ac.kr.

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ABSTRACT

Regardless of the malaria disease risk, the malaria parasite *Plasmodium falciparum* has an interesting mechanism. During its growth within the red blood cell, toxic free heme is converted into an insoluble crystalline form called the malaria pigment, or hemozoin. In particular, natural hemozoin nanocrystals can provide multiple applications in biosensing fields for health care and diagnosis as similar to artificial metal nanoparticles. In this study, the heme was biologically synthesized and polymerized by *Corynebacterium glutamicum* and final polymer was applied as a biomimetic conductive biopolymer. The biosynthesized

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