활성산소 매개 손상을 타겟으로 하는 세리아 기반 나노입자 치료

강동완, 이승훈
서울의대

Ceria-based nanoparticle therapy targeting ROS-mediated injury

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While recent endovascular treatment trials have been successful, no novel therapeutic agents for neuroprotection has been developed despite stroke communities' efforts. It became more difficult to find potent drug candidates having an additional effect on EVT. Moreover, outcome measure with modified Rankin scale assessed by ambulatory function might be too crude. Here, we introduce CX213, ceria-based nanoparticles for reducing mortality after subarachnoid hemorrhage (SAH), the most fatal subtype of stroke. CX213 is a nanozyme, "nano"-sized material that acts like en"zyme", reacting with all kinds of reactive oxygen species, superoxide, hydrogen peroxide, and hydroxyl radical. CX213 is biocompatible, self-regenerative, and has abundant action spots and huge surface-to-volume ratio. As an investigational drug, it is more potent than previously synthesized ceria-based nanoparticles, and has a large gap between therapeutic and toxic doses. In this lecture, the efficacy and safety profiles of CX213 on SAH will be introduced. With these pharmacological profiles, it is being prepared for US FDA IND approval in 2021 by Cenyx Biotech, Inc.

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