

A Systematic Review on The Usage of CRISPR-Cas System in The Treatment of Osteoarthritis(OA)

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Abstract : Background: It has been estimated that about 250 million people all over the world suffer from osteoarthritis (OA). Thus, OA is a major health problem in urgent need of better treatment. Problem statement: Current therapies for OA can temporarily relieve clinical symptoms and for pain management, rather than preventing or curing OA. Total knee replacement performed at the end stage of the disease is considered the only cure available. Objectives: This article aimed to explore the potential of treating osteoarthritis via the CRISPR Cas system. Methods: Articles that relate to the application of the CRISPR Cas system in osteoarthritis were extracted, categorized, and reviewed through the PRISMA method using PubMed, an engine published from November 2016 to November 2021. Results: There were 30 articles screened. Articles that fall under the categories of non-English articles, full articles that were not available, articles that were not an original articles were excluded. Ultimately, 13 articles were reviewed. Discussion: This review provides an information on the introduction of CRISPR and discussed on their mechanism of actions in extracted studies for OA treatment. Conclusions: It can be seen that not many medical research utilize the CRISPR Cas system as part of the method in the treatment of OA. Hence exploring the extent of the usage of the CRISPR Cas system in OA treatment is important to determine the research gap and point out at which of the research is needed further investigation to avoid redundancy of existing research and ensure the novelty of the research.

Keywords : osteoarthritis, treatment, CRISPR, review, therapy

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