



# DBPR807: A CXCR4-Targeted Antagonist

## INDICATIONS:

- ✓ Hepatocellular Carcinoma (HCC)
- ✓ Acute Myocardial Infarction (AMI)
- ✓ Mild Traumatic Brain Injury (mTBI)
- ✓ Age Related Macular Degeneration (AMD)

## PATENTS:

TWI664174, US10882854, AU2018208366, JP6982716, CA3047146, NZ754272, RU2756055C2, KR102335082, IN379503, CN110381949 etc.

## PUBLICATIONS:

1. Proc Natl Acad Sci U S A. 2021; 118: e2015433118
2. Int J Mol Sci. 2022 Oct 3;23(19):11730. doi: 10.3390/ijms231911730.

## DEVELOPMENT STATUS:

Pre-clinical

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## INVENTION DESCRIPTION

- **DBPR807** is a novel oxazole-based compound designed to target CXCR4 receptor. Treatment with **DBPR807** following IV or SC administration can significantly suppress tumor growth, prevent distant metastasis, reduce angiogenesis and normalize tumor microenvironment as well as promote cytotoxic T cell infiltration. Although **DBPR807** treatment alone can prolong survival as effectively as sorafenib and anti-PD-1 Ab, respectively, however, its combination therapy with either one of them can extend overall survival more significantly than a single monotherapy. In the meantime, **DBPR807** has also been shown to have much more efficacy in reducing liver tumor in several disease animal models than **AMD3100**, the only marketed CXCR4 antagonist, and **AMD11070**, a CXCR4 antagonist claimed to be orally dosed for RCC and WHIM syndrome in Phase II/III trials.
- When **DBPR807** was given following SC administration in the surgery-induced cardiac ischemia/reperfusion rat model, a significant heart-protective effect against ischemic damage caused by reperfusion was seen, wherein the volume of cardiac infarction and fibrosis was reduced by 43% in tested animals as compared to the vehicle. The study on the corresponding mini-pig model is also underway, the preliminary results of which have been shown to have statistical significance in improving many test items, including left ventricular ejection fraction (LVEF), etc.

## COMPETITIVE ADVANTAGES

- Hepatocellular Carcinoma: first-in-class (in combination with sorafenib or PD-1 antibody)
- Acute Myocardial Infarction: first-in-class

## MARKET POSITIONING/OPPORTUNITY

- Hepatocellular Carcinoma:  
The current market sale of sorafenib is about US\$ 1.1 billion, but its patent right expired in 2020. **DBPR807** entitled "A Highly Selective and Potent CXCR4 Antagonist for Hepatocellular Carcinoma Treatment" has been published online at: [www.pnas.org](http://www.pnas.org) with DOI number 10.1073/pnas.2015433118.
- Acute Myocardial Infarction:  
In 2015, approximately 15.9 million people worldwide have suffered from myocardial infarction. In the United States alone, approximately one million people suffer from myocardial infarction each year.

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