



## 脂肪間質幹細胞用於製備治療乾眼症之用途

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**市場及需求：**

目前在人類與犬隻之自體免疫性乾眼症，除以免疫抑制劑進行症狀緩解之外，並無治療之方法。本技術利用間葉幹細胞進行細胞療法，針對人、犬等哺乳動物之自體免疫性乾眼症進而引發的角膜結膜炎進行治療，除了可以緩解病程之進展，對免疫抑制療法無反應之病患也出現症狀緩解之現象，甚至開始對免疫抑制療法開始出現反應。此外療程結束之後，相關療效可以在無治療的情況下維持至少一年，相較於免疫抑制療法的每日投藥三次，更為簡便。

**技術摘要：**

本發明將間葉幹細胞製成局部點眼藥劑，以非侵入式之應用方式，針對自體免疫性乾眼症進行治療，並對超過半數病患的乾眼性角膜結膜炎產生顯著療效。此外，對免疫抑制劑無反應之病患也有相類似的療效。

**優勢：**

本發明有潛力成為自體免疫性乾眼症傳統治療的替代方案，相較於傳統治療一天需兩到三次的終身點藥，幹細胞治療僅需六次的療程，即可維持至少一年的療效。特別是對免疫抑制劑反應不佳的病患，局部點間葉幹細胞有助於改善乾眼症及相關之併發症狀。綜合上述，本發明為該類治療藥物中之首見 (first-in-class)。


**競爭產品：**

傳統點眼用免疫抑制劑，例如：Cyclosporine、Tacrolimus 等。目前市面上無間葉幹細胞製成之局部點眼藥劑。

**專利簡述：**

- (1)本技術已有相關專利 (中華民國專利申請號：I737062；美國專利申請中)。
- (2)論文已投稿於國際期刊，目前在審查中。

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## Use of adipose-derived mesenchymal stem cells for preparing pharmaceutical compositions for treating keratoconjunctivitis sicca

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### **Market Needs:**

Keratoconjunctivitis sicca (KCS) is an immune-related disease and can be found in both human and canine patients. In human, many of the KCS patients are in associate with autoimmune diseases such as Sjogren's syndrome, while canine KCS patients provide a useful model of autoimmune-mediated diseases. Currently, KCS treatments mainly rely on immunosuppressants, but the effectiveness was limited in some patients and the no cure is currently under development. This invention provides an efficient therapeutic measure that can ameliorate the progress of KCS to more than 50% of patients, even to those patients that did not respond to immunosuppressants. Moreover, after six treatments, the therapeutic effects could be maintained at least one year. Compared to currently 2-to-3 times per day immunosuppressant eye-drop treatment, our invention provides an easy and effective alternative therapeutic measure to KCS.

### **Our Technology:**

The present invention use mesenchymal stem cells as a non-invasive, topical eye drop to treat autoimmune related KCS. The progression of KCS in more than 50% of patients can be ameliorated, and a similar results were observed in patients that previously were responsive to immunosuppressants.

### **Strength:**

Compared to currently 2-to-3 times per day immunosuppressant eye-drop treatment, our invention provides an easy and effective alternative therapeutic measure to KCS.

### **Competing Products:**

There is no mesenchymal stem cell eye-drop product available on the market.

### **Intellectual Properties:**

Patent: I737062 (ROC), pending in USA

Manuscript submitted and under peer-review

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