

# 澳大利亚生物技术协会 澳大利亚医疗技术公司名录



## 公司介绍

公司名称: Elk OrthoBiologics Limited

主要联系人姓名: Dr. Andrew Bray

主要联系人职务: 首席执行官

公司网址: [www.elkortho.com](http://www.elkortho.com)

公司地址: Level 1, 123 Camberwell Road, East Hawthorn VIC 3123

公司已上市

## 公司简介

Elk OrthoBiologics 是一家澳大利亚生物技术公司, 专门开发用于修复非细菌感染型髋关节松动及人造膝关节植入物的微创型基因疗法。非细菌感染型髋关节松动是人工植入髋关节失败最常见的原因, 同时也是人工植入膝关节失败的一个重要原因。

Elk 的临床合作伙伴是位于荷兰 Leiden 的 Leiden 大学医学中心。澳大利亚的首要研究机构——联邦科学与工业研究组织 (CSIRO) 是 Elk 的主要股东之一。

非细菌感染型髋关节松动是人工植入髋关节失败最常见的原因。假体周围的骨骼随时间逐渐缺损并导致假体松动, 令患者遭受疼痛、日渐衰弱。非细菌感染型髋关节松动也影响其他人造关节, 包括膝关节和肩关节。全球每年有超过 100 万人造髋关节和 150 万人造膝关节首度植入于患者体内。长远看来, 尽管大部分的植入手术都成功, 但至少有 10% 接受人造髋和膝关节植入的患者需要在进行首次关节置换手术后的 10 年内进行修复手术, 替换非因细菌感染而松动的髋关节假体。典型患者的年龄都在 70 岁到 80 岁之间。

## 关键技术或领先技术

Elk 的主打项目 (CTL102/CB1954) 是一项基因介导的酶前体药物疗法 (GDEPT), 使用一种短效治疗方法来清除在松动假体接缝处形成的软组织, 从而通过微创手术将现有的假体重新粘固到骨组织上。此一次性短效基因疗法使用了一种非再生性 Ad5 型腺病毒来传递非人源酶, 酶在接缝处的软组织内转化前体药物, 使转化后的活性药物可以分解软组织, 再以针头注射方式

将软组织冲洗出关节间隙。在通过非手术方式清除接缝处组织后，假体可以重新以骨水泥接合至骨骼。

在近期的临床试验中，这些关键步骤已成功实施于老年患者，无需进行大型外科手术也不需全身麻醉。由于修复手术是目前唯一对非细菌感染型髋关节松动的治疗办法，许多患者因为个人生理因素不能进行手术，从而忍受着不可医治的痛苦。

#### 类别

设备类

整形外科

微创外科

其他： 短效基因疗法

#### 关键或领先技术的发展阶段

临床试验中阶段

#### 合作机会

Elk 在中国寻求两个具体的机会：

1. 找出可能的临床合作伙伴
2. 寻求投资合作伙伴,协助公司进行第二阶段临床试验

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## Directory of Australian medtech companies



#### **COMPANY DETAILS**

**Company name:** Elk OrthoBiologics Limited

**Key contact name:** Dr Andrew Bray

**Job title of key contact:** Chief Executive Officer

**Company website address:** [www.elkortho.com](http://www.elkortho.com)

**Company address:** Level 1, 123 Camberwell Road, East Hawthorn VIC 3123

**The company is Listed.**

### **ABOUT THE COMPANY**

Elk OrthoBiologics is an Australian biotechnology company developing a minimally invasive gene therapy for repairing aseptically loosened hip and knee prosthetic implants. Aseptic loosening is the most common cause of prosthetic hip failure and a significant cause of prosthetic knee failure.

Elk's clinical partner is the Leiden University Medical Center, in Leiden, the Netherlands. Australia's premier research institution, CSIRO, is a major shareholder.

Aseptic loosening is the most common cause of prosthetic hip failure. This painful and debilitating condition develops when bone recedes from an implanted prosthesis over time, causing the prosthesis to become 'loose'. Aseptic loosening also affects other prosthetic joints including knees and shoulders. Globally, over 1 million hip and 1.5 million knee prostheses are implanted for a first time each year. Whilst most implants are successful in the long term, at least 10% of hip and knee recipients undergo revision surgery to replace an aseptically loosened prosthesis within 10 years of the primary joint replacement procedure. Typical sufferers are aged in their 70s and 80s.

### **KEY OR LEAD TECHNOLOGY**

Elk's lead program, CTL102/CB1954, is a Gene Directed Enzyme Prodrug Therapy (GDEPT), where a short acting therapy removes the soft interface tissue that has formed around a loosened prosthetic implant, allowing the existing prosthesis to be re-cemented to the bone via a minimally invasive procedure. The single use short acting gene therapy uses a non-replicating Ad5 adenovirus to introduce a non-human enzyme that converts a small molecule prodrug into an active drug within the interface tissue, which breaks down the tissue, allowing it to be flushed out of the joint space via inserted needles. Following the non-surgical removal of the interface tissue, the prostheses can then be re-attached to the bone with orthopaedic cement.

In recent clinical trial studies, these critical steps have been demonstrated in elderly patients without the need for major surgery and without general anesthesia. As revision surgery is the only current treatment for aseptic loosening, there are many sufferers who have no treatment option because of other health concerns.

### **Category**

#### **Devices:**

Orthopaedics

Minimally invasive surgery

**Other:** Short acting gene therapy

### **Point of development of key or lead technology**

In clinical trials

### **OPPORTUNITIES SOUGHT**

Elk has two specific interests in China:

1. Identifying potential clinical partners
2. Investment partners to advance the Company's Phase 2 clinical program.