

## ASX ANNOUNCEMENT

## USA RNA/DNA PATENT FOR SURGICAL ADHESION ALLOWED

- Patent for the treatment of surgical adhesions via midkine targeting by nucleotide based drugs allowed in the US
- Comprehensive protection over antibodies, DNA/RNA
  antisense and RNA interference agents

**SYDNEY**, **10 February 2014**: **Cellmid Limited (ASX: CDY)** Notice of Allowance has been issued by the United States Patent and Trademark Office (USPTO) for Cellmid's patent application 13/539,247 entitled "Preventative for Adhesion Following Abdominal Surgery". This patent protects the use of midkine (MK)-specific DNA and RNA antisense molecules that disrupt MK expression and prevent the formation of surgical adhesions.

This patent complements the already granted US patent 10/547,011 entitled "Agents for Preventing Post-Laparotomy Adhesions" (CDY: ASX Announcement 18 April 2012), which covers the use of anti-midkine antibodies. Other patents in this family have already been granted in Japan and are under examination in Europe. The surgical adhesion patents make up one of the five key families which provide the company's dominant intellectual property position over the treatment of inflammatory diseases by targeting midkine.

Surgical adhesion is the build-up of internal scarring following surgery. Adhesions frequently occur between different organs or between organs and the abdominal wall, causing pain and even infertility in women. Although adhesions occur in over 95% of abdominal operations, this significant medical problem has been under-recognised.

Adhesions account for 6% of all readmissions following surgery, making it a massive and costly unmet medical need; the post-surgical anti-adhesion market is estimated at approximately \$3 billion in the US and \$5 billion globally. There are no drugs available for preventing surgical adhesions.

Currently surgical adhesion is most frequently treated by further surgery to sever the adhesions. However, approximately 85% of the time this simply results in more adhesions. The leading method for preventing abdominal surgical adhesions is insertion of bio-absorbable barriers during surgery. However this practise is often ineffective, relies on surgeons being trained in the proper use of the barriers, plus it extends operating time and associated costs and risks entailed with this.

Historically, nucleotide based drugs have been difficult to deliver so that they achieve pharmacokinetic levels that allow for a therapeutic effect. An anti-MK drug could be administered directly to the site of surgery negating the requirement for a delivery agent. Therefore a nucleotide based drug, such as an anti-MK antisense,

DNA or RNA interference covered by this patent, could be a feasible and effective therapy for adhesions.

Cellmid is currently preparing its anti-MK antibody program for "first in class" clinical trials. One of the objectives of the trial is to demonstrate that MK can be a safe therapeutic target. Evidence of safety of an anti-MK agent could open up opportunities for a number of pipeline products due to the strong intellectual property position Cellmid holds around this novel disease target.

Cellmid's patent portfolio currently includes over 80 patents in 19 patent families. The patents cover the use of MK and anti-MK agents for therapeutic purposes in a number of diseases, including cancer, inflammatory conditions and autoimmune diseases. In addition, patents covering the use of MK as a diagnostic marker in cancer and other disorders provide for a companion diagnostic, potentially accelerating clinical development.

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## Cellmid Limited (ASX: CDY)

Cellmid is an Australian biotechnology company with lead drug candidates in immunooncology. The Company is developing innovative novel therapies and diagnostic tests for a number of cancer indications, in particular solid tumours. Cellmid holds the largest and most comprehensive portfolio of intellectual property related to the novel oncology target midkine and midkine antagonists globally. The Company's most advanced development programmes involve using its anti-midkine antibodies in addition to commercialising midkine as a biomarker for the early diagnosis and prognosis of cancer. For further information please see <u>www.cellmid.com.au</u>.

## Midkine (MK)

Midkine is a growth factor that is highly expressed during embryonic development. Midkine modulates many important biological interactions such as cell growth, cell migration and cellular adherence. These functions are relevant to cancer, inflammation, autoimmunity, ischemia, nerve growth/repair and wound healing. Midkine is barely detectable in healthy adults and only occurs as a consequence of the pathogenesis of a number of different disorders. Midkine expression is often evident very early in disease onset, even before any apparent physical symptoms. Accordingly, midkine is an important early marker for diagnosing cancers and autoimmune diseases. Finally, midkine is only present in a disease context, and targeting midkine is not expected to harm normal healthy tissues.