



ASX AND MEDIA RELEASE

Positive Results for Peplin's Phase IIb AK Trial

- Met primary efficacy endpoint with statistically significant complete clearance rate of AK lesions vs. vehicle
- Reduction in overall lesion count in all active treatment groups
- Well-tolerated, rapidly resolving local skin responses at all concentrations and durations
- Clear dose response effect

EMERYVILLE, California and BRISBANE, Australia, 08 January 2009 Peplin, Inc. (ASX:PLI) today announced positive results with its lead product candidate PEP005 (ingenol mebutate) Gel in its Phase IIb actinic (solar) keratosis (AK) dose ranging clinical trial (PEP005-015) for the treatment of AK lesions on head locations, which comprise the face and scalp. AK is a common pre-cancerous skin condition caused by sun exposure. The face is the most common area for sun damage and the most common area for AK's, which can develop into skin cancers if left untreated.

As in previous trials, this study demonstrated a clear dose response relationship with four out of the six treatment groups achieving statistically significant clearance of AK lesions when compared with vehicle. The complete clearance rates ranged from 15.6% to 42.3% across the six active treatment groups. At all concentrations, for both the two day and three day treatments, the PEP005 Gel demonstrated a favourable safety profile and was well tolerated; side effects comprised primarily of transient, short term, local skin responses at the treatment site which peaked at Day 4 and returned to baseline by Day 15. There were no drug-related serious adverse events reported.

In the highest treatment group (0.015% PEP005 Gel for three consecutive days) the complete clearance rate (primary efficacy endpoint) was 42.3% ($p=0.005$ compared to vehicle) and the median reduction in lesion count was 84.5%. Additional trial results will be presented in an appropriate upcoming medical forum.

PEP005-015 was an eight-arm, 240-patient, US and Australian multi-centre, randomised, double-blind, vehicle-controlled, dose-ranging clinical trial. It was designed to evaluate the safety and efficacy of each of three concentrations (0.005%, 0.010% or 0.015%) and two treatment regimens (once a day for two or three consecutive days) for Peplin's patented product, PEP005 Gel in patients with AK lesions on the head when used as field-directed therapy.

Sydney dermatologist and one of the Australian trial investigators, Dr. Robert Rosen, said current treatment options for AK have a number of shortfalls, including how they impact the skin during prolonged treatment periods.

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“The major challenge we face is patient dissatisfaction with current topical medications, which have long durations of treatment, pain and persisting skin irritation and redness.” Dr. Rosen said.

“As a result, patients are often unwilling to use their medications, particularly for lesions on the face and scalp. Therefore, a topical medication which can effectively and conveniently treat AK lesions in two or three days will be of significant benefit to doctors and their patients.”

Peplin’s Chief Executive Officer, Tom Wiggans, is extremely pleased with the positive results from Peplin’s lead product development program.

“The completion of our Phase II program represents a significant milestone for Peplin and takes us an important step closer to commercialisation.

The data are consistent with prior trials and will allow us to select both a dose and regimen for our Phase III development which would make PEP005 Gel, if approved, a very important new product for the treatment of AK. As no current product on the market has a short course of therapy and proven efficacy for both head and non-head lesions, the potential value that PEP005 Gel offers patients is considerable.”

Peplin’s Chief Scientific Officer, Peter Welburn, also expressed his delight at the successful results which were reported within the anticipated timeframe.

“Managing the development of this product through Phase I and II trials, with the results consistently demonstrating statistically significant clearance of AK lesions at varying dosage regimens, has been very rewarding. The rapid enrolment of patients into this study emphasizes the unmet need for a therapy like PEP005 Gel. Our ability to select a well tolerated dose which offers a highly competitive and statistically significant clearance rate is extremely exciting and puts Peplin in a great position for further Phase III development.”

Following an End-of-Phase II meeting with the U.S. Food and Drug Administration (FDA), Peplin plans to initiate a subsequent Phase III clinical trial for patients with AK lesions on the head (REGION-II) in 2009.

Completion of enrolment in Peplin’s first Phase III trial, REGION-I, treating AK lesions on the body, was announced in December 2008. REGION-I is being conducted under a Special Protocol Assessment with the FDA, an agreement that the trial protocol design, clinical endpoints, and statistical analyses are acceptable to support a new drug application (NDA). It is binding upon the FDA unless a substantial scientific issue essential to determining safety or efficacy is identified after the testing is begun. REGION-I results are expected in the first half of 2009.

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ABOUT PEPLIN

Peplin is a development stage specialty pharmaceutical company focused on advancing and commercializing innovative medical dermatology products. Peplin is currently developing PEP005 (ingenol mebutate), which is the first in a new class of compounds and which is derived from the sap of *Euphorbia peplus*, or *E. peplus*, a rapidly growing, readily available plant commonly referred to as petty spurge or radium weed. *E. peplus* has a long history of traditional use for a variety of conditions, including the topical self-treatment of various skin disorders, including skin cancer and pre-cancerous skin lesions. Peplin's lead product candidate is a patient-applied topical gel containing ingenol mebutate, a compound the use of which Peplin has patented for the treatment of actinic (solar) keratosis, or AK. This product candidate is currently in Phase III clinical trials (trial known as REGION-I) and is referred to as PEP005 (ingenol mebutate) Gel.

ABOUT AK

Actinic keratoses (AK), also known as solar keratosis or sun spots, is generally considered the most common pre-cancerous skin condition. AK usually appears as small, rough, scaly areas on the face, lips, ears, back of hands, forearms, scalp or neck. If left untreated, AK lesions may progress to a form of skin cancer called squamous cell carcinoma, or SCC. The Lewin Group, Inc., estimates that the total direct costs for AK in the United States was \$1.2 billion in 2004, and in 2002 there were approximately 8.2 million office visits for the treatment of AK. The Lewin Group also estimated that there were 58 million people in the United States living with AK in 2004. According to a May 2006 issue of *The Journal of Family Practice*, in northern hemisphere populations, 11% to 25% of adults have at least one AK lesion, compared with 40% to 60% of adults in Australia, which has the highest prevalence of AK worldwide.

FORWARD LOOKING STATEMENTS

This press release contains "forward-looking statements" as defined under U.S. federal securities laws, including, but not limited to, Peplin's clinical development plan referred to herein. These forward-looking statements can be identified through the use of words such as "anticipates," "expects," "intends," "plans," "believes," "seeks," "estimates," "may," "will," and variations of these words or similar expressions. Forward looking statements are based on management's current, preliminary expectations and actual results could differ materially as a result of various risks and uncertainties, including, but not limited to, delays in the completion of clinical trials resulting from, among other things, ambiguous or negative interim results, unforeseen safety issues, failure to conduct the clinical trials in accordance with regulatory requirements or clinical protocols, suspension or termination of a clinical trial by the FDA or other regulatory authorities, lack of adequate funding to continue a clinical trial and other important factors disclosed from time to time in Peplin's disclosures to the ASX. Forward-looking statements speak only as of the date they were made. No undue reliance should be placed on any forward-looking statements. Such information is subject to change, and we undertake no obligation to update such statements.