技術名稱

造影劑增強超音波於藥物制放量之定量

(中華民國專利發明第 I405583 號；美國專利 US 9,144,414 B2，如附件)

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技術內容簡介

本發明係關於定量藥物制放量之方法，其特徵在於利用一造影劑增強超音波測量周邊血管之訊號強度，以定量一目標區之藥物制放量。本發明之方法可用於定量超音波觸發氣泡破裂之靶向藥物制放、定量長效型藥物於目標物體內之未釋放總量，以及用於協助制定超音波開啟血腦屏障之治療時間表等應用。

預期利用範圍

1.用於組織結構分析，以定量之微氣泡來呈現不同介質之影像，以獲得準確之診斷率。

2.範圍:腫瘤科、心臟科、消化內科、一般外科等超音波檢查。

預期產品

超音波儀器

參與資格

1. 產業類別：醫療產業
2. 應具備之專門技術：超音波儀器
3. 應有之機具設備：製作微米級或奈米級微氣泡相關設備
4. 應有之研究人員或技術人員(數)：2~數名
5. 其他條件：

中 華 民 國 專 利 證 書

發明第 I 405583 號

發 明 名 稱：造影劑增強超音波於藥物制放量之定量

專 利 權 人：台北市立聯合醫院

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專利權期間：自 2013年 8 月 21 日至 2031年 11 月 2 日止

上開發明業經專利權人依專利法之規定取得專利權

經濟部智慧財產局
局 長 王美花

中 華 民 國 102 年 8 月 21 日

注意：專利權人未依法繳納年費者，其專利權自原繳費期限屆滿後消滅。

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Hung et al.

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(54) **METHOD FOR QUANTIFYING DRUG DELIVERY USING CONTRAST-ENHANCED ULTRASOUND**

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(30) **Foreign Application Priority Data**

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A61B 8/00 (2006.01)

(52) **U.S. Cl.**
CPC ***A61B 8/085*** (2013.01); ***A61B 8/0808*** (2013.01); ***A61B 8/4477*** (2013.01); ***A61B 8/481*** (2013.01); *A61B 8/0891* (2013.01)

(58) **Field of Classification Search**
USPC 600/458, 407, 437
See application file for complete search history.

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(57) **ABSTRACT**

The present invention relates to a method for quantifying drug delivery with the characteristic of measuring the signal intensity of peripheral vessels with a contrast-enhanced ultrasound to quantify the drug delivery at a target site. The present invention can be used for quantifying UTMD (ultrasound triggered microbubble destruction) targeted drug delivery, also for qualifying the unreleased amount of the long-acting drug in the tested object, and for helping setting the treatment schedule for ultrasound disruption of blood-brain barrier.

14 Claims, 8 Drawing Sheets