



US010272083B2

(12) **United States Patent**  
**Hamdy et al.**

(10) **Patent No.: US 10,272,083 B2**

(45) **Date of Patent: Apr. 30, 2019**

(54) **METHODS OF TREATING CHRONIC LYMPHOCYTIC LEUKEMIA AND SMALL LYMPHOCYTIC LEUKEMIA USING A BTK INHIBITOR**

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **15/112,968**

(22) PCT Filed: **Jan. 21, 2015**

(86) PCT No.: **PCT/IB2015/000645**

§ 371 (c)(1),

(2) Date: **Jul. 20, 2016**

(87) PCT Pub. No.: **WO2015/110923**

PCT Pub. Date: **Jul. 30, 2015**

(65) **Prior Publication Data**

US 2017/0095471 A1 Apr. 6, 2017

**Related U.S. Application Data**

(60) Provisional application No. 62/035,777, filed on Aug. 11, 2014, provisional application No. 61/929,742, filed on Jan. 21, 2014, provisional application No. 61/974,665, filed on Apr. 3, 2014.

(51) **Int. Cl.**  
*A61K 31/4985* (2006.01)  
*A61K 39/395* (2006.01)  
*A61K 45/06* (2006.01)  
*C07K 16/28* (2006.01)

(52) **U.S. Cl.**  
CPC .... *A61K 31/4985* (2013.01); *A61K 39/39558* (2013.01); *A61K 45/06* (2013.01); *C07K 16/2887* (2013.01); *C07K 2317/24* (2013.01); *C07K 2317/732* (2013.01)

(58) **Field of Classification Search**  
CPC ..... A61K 31/4985; A61K 31/498; A61K 31/4995; A61K 31/50; A61K 39/395558; A61K 45/06

See application file for complete search history.

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(57) **ABSTRACT**

Therapeutic methods of treating chronic lymphocytic leukemia (CLL) and small lymphocytic leukemia (SLL) are described. In certain embodiments, the invention includes therapeutic methods of treating CLL and SLL using a BTK inhibitor. In certain embodiments, the invention includes therapeutic methods of treating subtypes of CLL and SLL using a BTK inhibitor, including subtypes of CLL in patients sensitive to thrombosis and subtypes of CLL that increase monocytes and NK cells in peripheral blood after treatment with a BTK inhibitor. In certain embodiments, the invention includes therapeutic methods of treating CLL and SLL using a combination of a BTK inhibitor and an anti-CD20 antibody.

**20 Claims, 25 Drawing Sheets**

**Specification includes a Sequence Listing.**

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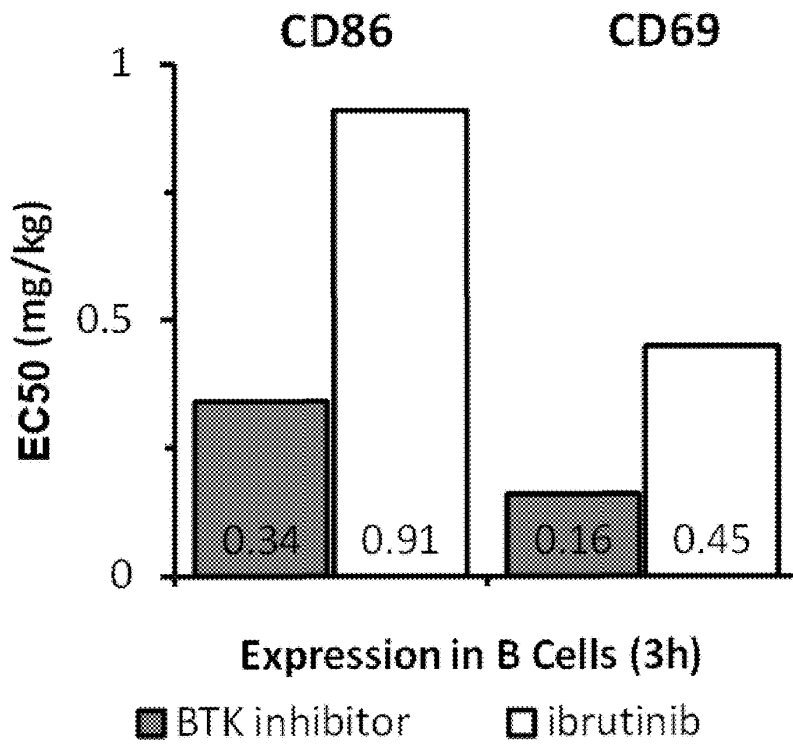


FIG. 1

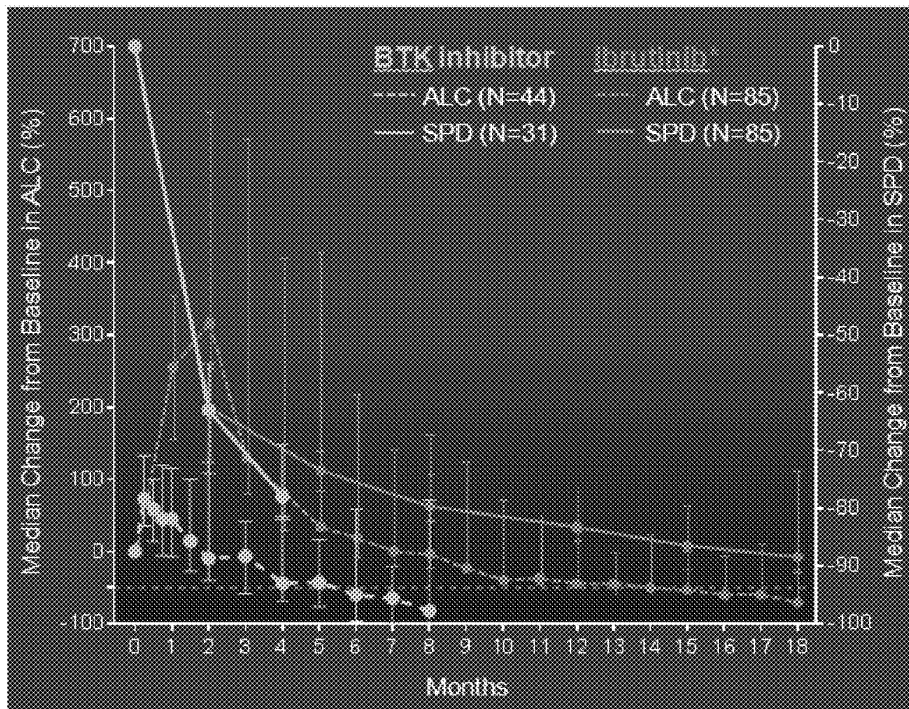


FIG. 2

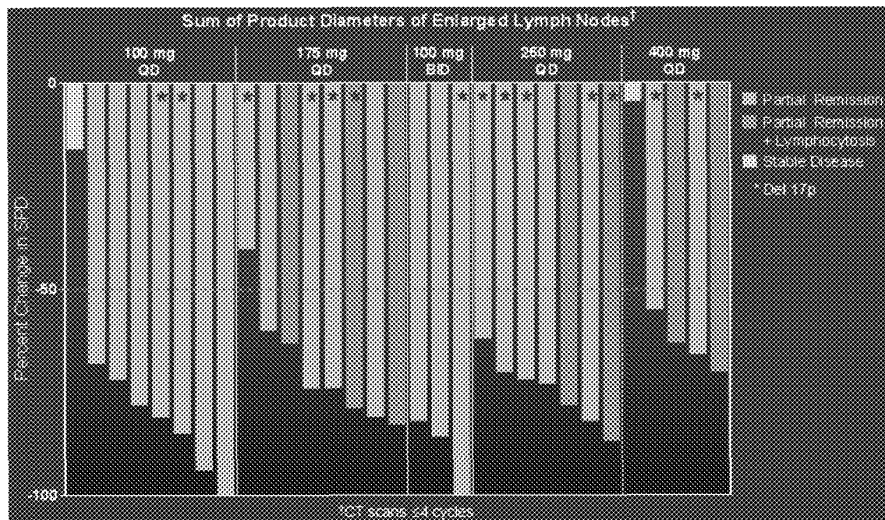


FIG. 3

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