US010449139B2

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

(10) **Patent No.: US 10,449,139 B2**
(45) **Date of Patent: *Oct. 22, 2019**

(54) **AQUEOUS ORAL CARE COMPOSITIONS**

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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 408 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **13/997,381**

(22) PCT Filed: **Dec. 23, 2010**

(86) PCT No.: **PCT/US2010/061959**

§ 371 (c)(1),
(2), (4) Date: **Jun. 24, 2013**

(87) PCT Pub. No.: **WO2012/087325**

PCT Pub. Date: **Jun. 28, 2012**

(65) **Prior Publication Data**

US 2013/0272971 A1 Oct. 17, 2013

(51) **Int. Cl.**

A61K 31/723	(2006.01)
A61K 31/78	(2006.01)
A61Q 11/00	(2006.01)
A61K 8/73	(2006.01)
A61K 8/81	(2006.01)

(52) **U.S. Cl.**

CPC ***A61K 8/731*** (2013.01); ***A61K 8/73*** (2013.01); ***A61K 8/8147*** (2013.01); ***A61Q 11/00*** (2013.01); *A61K 2800/594* (2013.01)

(58) **Field of Classification Search**

CPC A61Q 11/00; A61K 8/8147; A61K 8/731; A61K 8/736; A61K 8/73; A61K 31/79; A61K 8/8176; A61K 8/8182

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,943,063	A	3/1976	Morishita et al.	
5,015,467	A *	5/1991	Smitherman	A61K 8/19 424/435
5,137,729	A	8/1992	Kuroya et al.	
5,202,112	A *	4/1993	Prencipe	A61Q 11/00 424/49
5,334,375	A	8/1994	Nabi et al.	
5,562,939	A	10/1996	Lewis	
5,658,554	A *	8/1997	Fisher	A61K 33/42 424/49
5,776,435	A	7/1998	Gaffar et al.	
5,876,744	A *	3/1999	Della Valle	A61K 8/732 424/434
6,106,883	A	8/2000	Sokolik et al.	
6,153,210	A	11/2000	Roberts et al.	
6,159,459	A *	12/2000	Hunter et al.	424/78.08
6,595,997	B2	7/2003	Axelson, Jr. et al.	
6,596,298	B2	7/2003	Leung et al.	
6,602,841	B1	8/2003	Becker et al.	
6,682,721	B2	1/2004	Kim et al.	
6,683,067	B2	1/2004	Lawler et al.	
7,008,979	B2	3/2006	Schottman et al.	
7,241,411	B2	7/2007	Berry et al.	
7,357,891	B2	4/2008	Yang et al.	
7,723,430	B2	5/2010	Kunitake et al.	
2001/0006624	A1	7/2001	Witt et al.	
2002/0041852	A1	4/2002	Napolitano et al.	
2002/0192350	A1*	12/2002	Hynes	A23L 2/02 426/590
2003/0060486	A1*	3/2003	Jacob	A61K 9/006 514/320
2003/0215401	A1	11/2003	Estrada et al.	
2005/0214720	A1*	9/2005	Milanovich	A61K 8/22 433/215
2006/0110416	A1	5/2006	Ryles et al.	
2007/0044824	A1	3/2007	Capeci et al.	
2007/0053849	A1	3/2007	Doyle et al.	
2007/0059257	A1*	3/2007	Estrada	A61K 8/0216 424/52
2007/0122358	A1	5/2007	Wang et al.	
2007/0122359	A1*	5/2007	Wang et al.	424/52
2008/0317703	A1*	12/2008	Kawa et al.	424/78.32
2009/0068122	A1	3/2009	Pilch et al.	
2009/0068259	A1	3/2009	Pilch et al.	
2009/0238777	A1	9/2009	Joziak et al.	
2010/0076080	A1	3/2010	Yelm et al.	

(Continued)

FOREIGN PATENT DOCUMENTS

JP	2002-226315	8/2002
JP	2005-187330	7/2005

(Continued)

OTHER PUBLICATIONS

Johanson, Pharmaceutical Manufacturing International, (1995) pp. 1-4.*
Todica et al. Chinese Physics Letters, 27(1), (2010).*
Mehravaran et al., Iranian Journal of Pharmaceutical Research, 8: 3-13 (2009).*
Speers et al., Journal of Food Science, 51: 96-98 (1986).*
Abdelrahim et al., International Journal of Food Science and Technology, 29: 243-253 (1994).*
E3070—16, ASTM, accessed at https://compass.astm.org/download/E3070.10291.pdf downloaded May 16, 2017.*
Pereira et al., B. Ceppa, 25(2), pp. 285-294. (Year: 2007).*
Marcotte et al., Journal of Food Engineering, 48, pp. 157-167. (Year: 2001).*

(Continued)

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(57) **ABSTRACT**

Described herein are aqueous compositions comprising polymers, which deliver a polymer film to surfaces of the oral cavity to relieve dry mouth; and methods of preparing and using the same.

10 Claims, No Drawings