US009913824B2

(12) **United States Patent**
Snyder

(10) **Patent No.: US 9,913,824 B2**
(45) **Date of Patent: Mar. 13, 2018**

(54) **METHODS FOR INTERNALLY CONTROLLING OR TREATING EQUINE BOT LARVAE**

(75) Inventor: **Daniel Earl Snyder**, Indianapolis, IN (US)

(73) Assignee: **ELANCO US INC.**, Greenfield, IN (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 753 days.

(21) Appl. No.: **13/515,603**

(22) PCT Filed: **Jan. 20, 2011**

(86) PCT No.: **PCT/US2011/021837**
§ 371 (c)(1),
(2), (4) Date: **Jun. 13, 2012**

(87) PCT Pub. No.: **WO2011/091122**
PCT Pub. Date: **Jul. 28, 2011**

(65) **Prior Publication Data**

US 2012/0252746 A1 Oct. 4, 2012

Related U.S. Application Data

(60) Provisional application No. 61/297,928, filed on Jan. 25, 2010.

(51) **Int. Cl.**
A61K 31/7048 (2006.01)
A61K 31/343 (2006.01)

(52) **U.S. Cl.**
CPC ***A61K 31/343*** (2013.01); ***A61K 31/7048*** (2013.01)

(58) **Field of Classification Search**
USPC 514/28
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,001,981 A * 12/1999 DeAmicis et al. 536/7.1
6,664,237 B1 * 12/2003 Snyder 514/28
7,608,604 B2 10/2009 Comlay et al.
2005/0032716 A1 * 2/2005 Lowe A01N 43/90 514/28
2008/0108800 A1 * 5/2008 Podhorez C07H 17/08 536/7.1

FOREIGN PATENT DOCUMENTS

CA	2736209	A1	3/2011
EP	0 375 316	A1	6/1990
WO	WO 01/11963	A1	2/2001
WO	WO 02/077005	A1	10/2002
WO	2005112950		12/2005
WO	2006109069		10/2006
WO	WO 2010/030501	A2	3/2010
WO	WO 2010/126584	A1	11/2010

OTHER PUBLICATIONS

Klei, T. et al "Re-evaluation of ivermectin efficacy . . . " Vet. Parasitol. (2001) vol. 98, pp. 315-320.*

Dripps et al., "Spinetoram: How artificial intelligence combined natural fermentation with synthetic chemistry to produce a new spinosyn insecticide," Plant Health Progress, http://www.plantmanagementnetwork.org/pub/php/perspective/2008/spinetoram/, Aug. 22, 2008, Plant Management Network.

Otranto et al., "Species composition of *Gasterophilus* spp. (*Diptera, Oestridae*) causing equine gastric myiasis in southern Italy: Parasite biodiversity and risks for extinction," Veterinary Parasitology, 2005; 133:111-118, www.elsevier.com/locate/vetpar.

Otranto et al., "Species composition of *Gasterophilus* spp. (*Diptera, Oestridae*) causing equine gastric myiasis in southern Italy: Parasite biodiversity and risks for extinction," Veterinary Parasitology 133 (2005) 111-118.

Parasitol. Res., 2009, vol. 104, pp. 209-216.

* cited by examiner

Primary Examiner — Leigh C Maier
(74) *Attorney, Agent, or Firm* — McAndrews, Held & Malloy, Ltd.

(57) **ABSTRACT**

Provided are novel methods and formulations for orally controlling bot larvae in the gastrointestinal tract of equine animal using a spinosyn.

7 Claims, No Drawings