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(12) **United States Patent**
Viglietta(10) **Patent No.: US 10,555,993 B2**(45) **Date of Patent: *Feb. 11, 2020**(54) **DIMETHYL FUMARATE AND
VACCINATION REGIMENS**(71) Applicant: **Biogen MA Inc.**, Cambridge, MA (US)(72) Inventor: **Vissia Viglietta**, Boston, MA (US)(73) Assignee: **Biogen MA Inc.**, Cambridge, MA (US)

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(51) **Int. Cl.****A61K 39/09** (2006.01)**A61K 39/05** (2006.01)**A61K 31/225** (2006.01)**A61K 39/00** (2006.01)(52) **U.S. Cl.**CPC **A61K 39/092** (2013.01); **A61K 31/225** (2013.01); **A61K 39/05** (2013.01); **A61K 2039/545** (2013.01); **A61K 2039/6081** (2013.01)(58) **Field of Classification Search**CPC **A61K 39/092**; **A61K 39/05**; **A61K 31/225**; **A61K 2039/6081**; **A61K 2039/545**
See application file for complete search history.(56) **References Cited****U.S. PATENT DOCUMENTS**

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Provided herein is a method of treating or preventing a disease or disorder (e.g., MS) in a subject in need thereof, comprising (a) administering to the subject a first dose of a pharmaceutical composition comprising a fumarate agent (e.g., DMF) for a first dosing period; (b) administering a vaccine; and (c) administering to the subject a second dose of the pharmaceutical composition for a second dosing period.

22 Claims, No Drawings