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(71) Applicant: **PROLIFIC MACHINES INC.** [US/US]; 479
Jessie St., San Francisco, CA 94103 (US).

(72) Inventors: **KENT, Deniz**; 479 Jessie St., San Francisco,
CA 94103 (US). **HUISMAN, Max**; 479 Jessie St., San
Francisco, CA 94103 (US). **JONES, Declan**; 479 Jessie St.,
San Francisco, CA 94103 (US). **JONES, Victor**; 479 Jessie
St., San Francisco, CA 94103 (US). **HOOLEY, Monique**;

479 Jessie St., San Francisco, CA 94103 (US). **GALE, Emi-
ly**; 479 Jessie St., San Francisco, CA 94103 (US).

(74) Agent: **BARKER, Adrian**; Wilson Sonsini Goodrich &
Rosati, 650 Page Mill Road, Palo Alto, CA 94304 (US).

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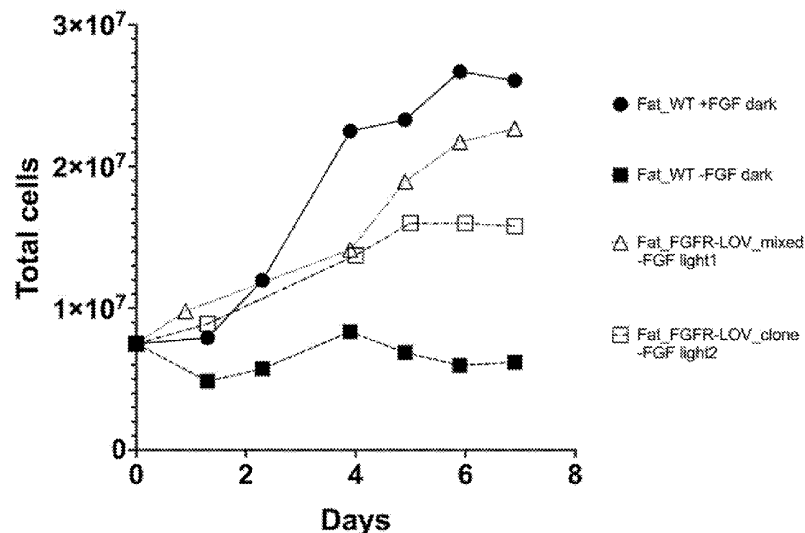


FIG. 2

(57) Abstract: Provided herein are methods and systems for growing and maintaining stem cells in suspension. In some cases, the methods and systems involve the use of optical switches for activating one or more growth factor signaling pathways involved in the growth and/or maintenance of stem cells.

[Continued on next page]

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