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- (71) **Applicant:** AMGEN INC. [US/US]; One Amgen Center Drive, Thousand Oaks, CA 91320 (US).
- (72) **Inventors:** LI, Yi; c/o Amgen Inc., One Amgen Center Drive, Law Dept. - Patent Operations MS 28-5-A, Thousand Oaks, CA 91320-1799 (US). CHEN, Chun; c/o Amgen Inc., One Amgen Center Drive, Law Dept. - Patent Operations MS 28-5-A, Thousand Oaks, CA 91320-1799 (US).
- (74) **Agent:** SULLIVAN, Kylee, A. et al.; Wolf, Greenfield & Sacks, P.C., 600 Atlantic Avenue, Boston, MA 02210-2206 (US).

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(54) **Title:** SYSTEMS AND METHODS FOR SEED TRAIN OPTIMIZATION

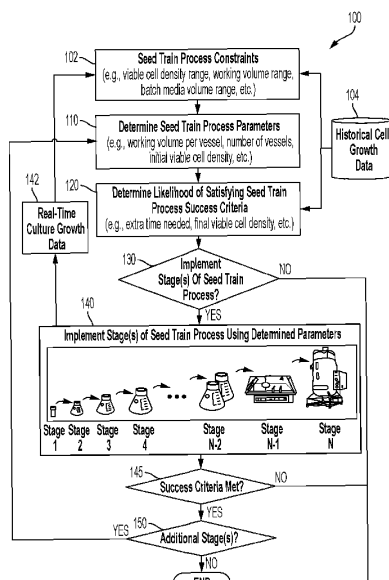


FIG. 1A

(57) **Abstract:** Techniques for determining parameters for a seed train process for growing a culture of cells. The techniques include obtaining a specification of seed train process constraints for multiple stages of the seed train process; determining the seed train process parameters using the seed train process constraints, the seed train process parameters comprising a respective set of parameters for each particular stage of multiple stages of the seed train process; determining, using historical cell growth data and the seed train process parameters, a likelihood indicative of whether performing the seed train process using the seed train process parameters will satisfy seed train process success criteria; and outputting the set of seed train process parameters for each stage of the multiple stages of the seed train process and the likelihood indicative of whether performing the seed train process will satisfy the seed train process success criteria.