SYSTEMS AND METHODS FOR INTELLIGENT CONSTRUCTION OF ANTIBODY LIBRARIES

ABSTRACT

Presented herein are systems and methods for constructing antibody libraries using machine learning to inform sequence selection for inclusion in the library. The techniques include (i) the training and use of machine learning models and statistical models to predict biophysical and biochemical properties from sequences, and (ii) the training and use of machine learning models for predicting developability from sequences, and for generating novel sequences. In certain embodiments, the systems and methods generate libraries of antibodies (and/or antibody-encoding polynucleotides) by specifically designing the libraries with directed sequence and/or length diversity. The resulting libraries are useful, for example, in the development of therapeutic agents.

Fig. 1