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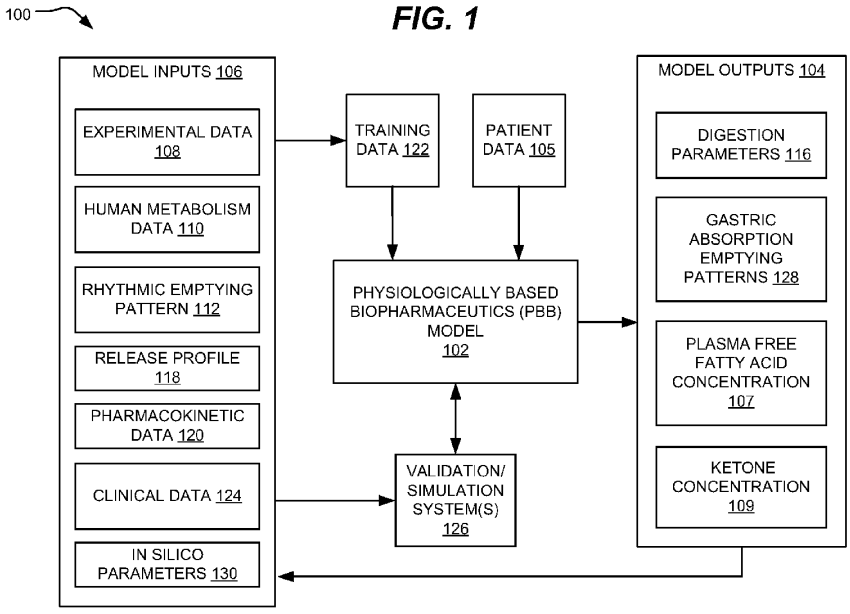
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(54) Title: SYSTEMS, METHODS, AND DEVICES FOR PREDICTING PHARMACOKINETIC INFLUENCES ON KETOGENESIS FOLLOWING ADMINISTRATION OF TRICAPRILIN

FIG. 1



(57) Abstract: Systems, methods, and devices predict pharmacokinetic parameters following administration of a formulation, such as a medium-chain triglyceride (MCT). The method includes generating training data indicating human metabolism outcomes of the formulation. The training data includes stomach emptying parameters, a digestion rate, an absorption constant, or a conversion rate with a training target variable being ketone concentration or plasma free fatty acid concentration. The method also includes training a physiologically based biopharmaceutics (PBB) model with the training data and using the PBB model to predict, using the patient data, at least one of a target plasma free fatty acid concentration or a target ketone concentration. Furthermore, as part of a parameter sensitivity analysis of the PBB model, the method varies input parameters of the training data against a simulated mean plasma free

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fatty acid profile or a simulated mean ketone plasma profile.