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(71) **Applicant**: **CODEXIS, INC.** [US/US]; 200 Penobscot Drive, Redwood City, California 94063 (US).

(72) **Inventors**: **HUISMAN, Gjalt, W.**; 200 Penobscot Drive, Redwood City, California 94063 (US). **AGARD, Nicholas, J.**; 200 Penobscot Drive, Redwood City, California 94063 (US). **MIJTS, Benjamin**; 200 Penobscot Drive, Redwood City, California 94063 (US). **VROOM, Jonathan**; 200 Penobscot Drive, Redwood City, California 94063 (US). **ZHANG, Xiyun**; 200 Penobscot Drive, Redwood City, California 94063 (US).

(74) **Agent**: **MACKNIGHT, Kamrin, T.**; CODEXIS, INC., 200 Penobscot Drive, Redwood City, California 94063 (US).

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(54) **Title**: ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES

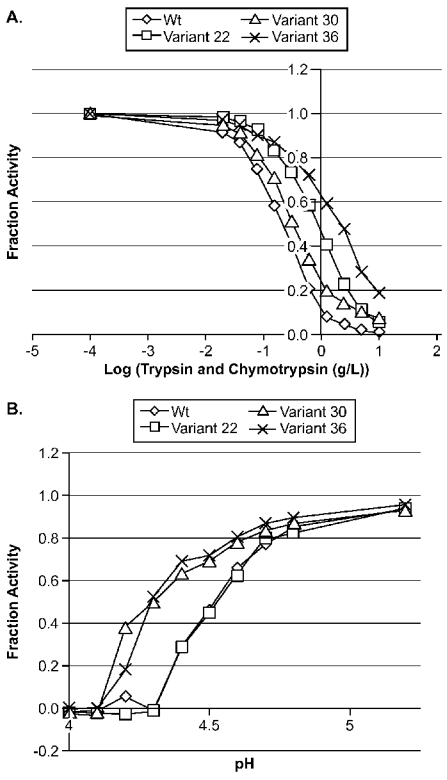


FIG. 2

(57) **Abstract**: The present invention provides engineered phenylalanine ammonia-lyase (PAL) polypeptides and compositions thereof, as well as polynucleotides encoding the engineered phenylalanine ammonia-lyase (PAL) polypeptides. In some embodiments, the engineered PAL polypeptides are optimized to provide enhanced catalytic activity, as well as reduced sensitivity to proteolysis and increased tolerance to acidic pH levels. In some embodiments the engineered PAL polypeptides are deimmunized. The invention also relates to the use of the compositions comprising the engineered PAL polypeptides for therapeutic and industrial purposes.

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