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(54) Title: ENGINEERED LEUCINE DECARBOXYLASES

(57) Abstract: The present invention provides engineered leucine decarboxylase (LDC) polypeptides and compositions thereof, as well as polynucleotides encoding the engineered leucine decarboxylase (LDC) polypeptides. In some embodiments, the engineered LDC polypeptides are optimized to provide enhanced catalytic activity, as well as reduced sensitivity to proteolysis, and/or increased tolerance to low pH environments. In some embodiments, the engineered LDC polypeptides are optimized to provide improved storage stability. The present invention also provides methods for the use of the compositions comprising the engineered LDC polypeptides for therapeutic and industrial purposes.