99% identical to the amino acid sequence corresponding to SEQ ID NO: 8, 42, 44, 46, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 124, and 126., wherein the improved ketoreductase polypeptide amino acid sequence includes any one set of the specified amino acid substitution combinations presented in Tables 3 and 4. In some embodiments, these ketoreductase polypeptides can have mutations at other amino acid residues.

[0020] The present disclosure provides polynucleotides encoding the engineered ketoreductases described herein or polynucleotides that hybridize to such polynucleotides under highly stringent conditions. The polynucleotide can include promoters and other regulatory elements useful for expression of the encoded engineered ketoreductase, and can utilize codons optimized for specific desired expression systems. In some embodiments, the polynucleotides encode a ketoreductase polypeptides having at least the following amino acid sequence as compared to the amino acid sequence of SEQ ID NO:2, 4, or 158: the amino acid residue corresponding to X145 is a serine, and the amino acid residue corresponding to X190 is a cysteine. Exemplary polynucleotides include, but are not limited to, a polynucleotide sequence of SEQ ID NO: 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93, 95, 97, 99, 101, 103, 105, 107, 109, 111, 113, 115, 117, 119, 121, 123, and 125.

[0021] The present disclosure provides host cells comprising the polynucleotides and/or expression vectors described herein. The host cells may be *L. kefir* or *L. brevis*, or they may be a different organism, and as *E. coli*. The host cells can be used for the expression and isolation of the engineered ketoreductase enzymes described herein, or, alternatively, they can be used directly for the conversion of the substrate to the stereoisomeric product.

[0022] Whether carrying out the method with whole cells, cell extracts or purified ketoreductase enzymes, a single ketoreductase enzyme may be used or, alternatively, mixtures of two or more ketoreductase enzymes may be used.

[0022a] In another aspect, there is provided a method for reducing a carbonyl group of a substrate compound to its corresponding alcohol group, the method comprising contacting the substrate compound with an engineered polypeptide described herein in the presence of a NADH or NADPH cofactor, wherein the substrate is a ketone.

[0023] The ketoreductase enzymes described herein are capable of catalyzing the reduction reaction of the keto group in the compound of structural formula (**I**), 5-((4*S*)-2-oxo-4-phenyl (1,3-oxazolidin-3-yl))-1-(4-fluorophenyl) pentane-1,5-dione ("the substrate"),

residue corresponding to X194 is arginine or glutamine;
residue corresponding to X197 is valine or glutamic acid;
residue corresponding to X198 is glycine, glutamic acid, or lysine;
residue corresponding to X199 is aspartic acid;
residue corresponding to X200 is proline;
residue corresponding to X202 is glycine;
residue corresponding to X206 is glycine;
residue corresponding to X211 is arginine or lysine;
residue corresponding to X223 is valine; or
residue corresponding to X250 is isoleucine;
wherein the amino acid sequence can optionally have one or more residue differences at other amino acid residues as compared to the reference sequence.

6. The recombinant polypeptide of claim 3, wherein the amino acid sequence includes one or more of the following:
residue corresponding to X7 is serine;
residue corresponding to X108 is histidine or serine;
residue corresponding to X117 is serine;
residue corresponding to X152 is methionine or lysine; or
residue corresponding to X199 is aspartic acid;
wherein the amino acid sequence can optionally have one or more residue differences at other amino acid residues as compared to the reference sequence.

7. A method for reducing a carbonyl group of a substrate compound to its corresponding alcohol group, the method comprising contacting the substrate compound with an engineered polypeptide of claim 1 in the presence of a NADH or NADPH cofactor, wherein the substrate is a ketone.