CLAIMS

What is claimed is:

1. An engineered polypeptide comprising an amino acid sequence with at least 80% sequence identity to a reference sequence of SEQ ID NO: 14, wherein said engineered polypeptide has imine reductase activity, and wherein said engineered polypeptide comprises an asparagine residue at position 169 wherein said position is numbered with reference to SEQ ID NO:2.

2. The engineered polypeptide of claim 1, wherein said polypeptide further comprises at least one substitution selected from 57T/211L, 87S/175G, 103H/212C, 122E, 123G, 124A/178I, 124G, 132H/R, 134R, 171W, 173H/I, 175G/H, 176S, 178I/242Y, 178M, 211L/W, 212C/G/V, 213P/R/T/V, 214M, 215L/M, 217I/L, 234L, and 235K, wherein said positions are numbered with reference to SEQ ID NO:2.

3. The engineered polypeptide of claim 1, wherein said polypeptide further comprises at least one substitution selected from A57T/I211L, P87S/M175G, R103H/E212C, L122E, T123G, I124A/V178I, I124G, E132H/R, T134R, Y171W, A173H/I, M175G/H, L176S, V178I/A242Y, V178M, I211L/W, E212C/G/V, A213P/R/T/V, V214M, T215L/M, W217I/L, D234L, and A235K, wherein said positions are numbered with reference to SEQ ID NO:2.

4. The engineered polypeptide of claim 1, wherein said polypeptide comprises an amino acid sequence with at least 80% sequence identity to any even-numbered sequence set forth in SEQ ID NO:4 to SEQ ID NO:74.

5. A method of producing an engineered imine or oxime reductase polypeptide, comprising the steps of culturing a host cell, under conditions such that an engineered polynucleotide is expressed and said engineered polypeptide of claim 1 is produced.

6. The method of claim 5, further comprising the step of recovering said engineered polypeptide.