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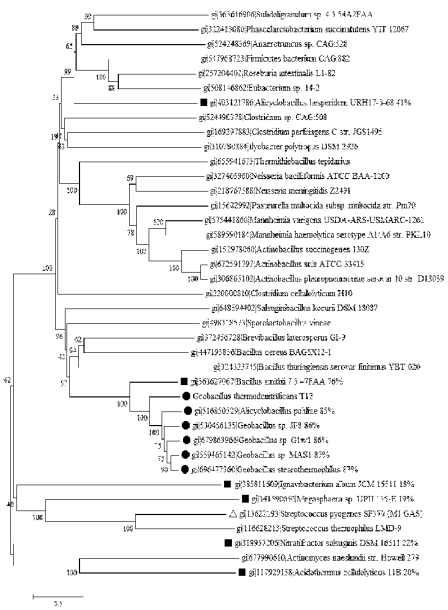
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(54) Title: THERMOSTABLE CAS9 NUCLEASES

Figure 1



(57) Abstract: Thermostable Cas9 nucleases. The present invention relates to the field of genetic engineering and more particularly to nucleic acid editing and genome modification. The present invention provides an isolated Cas protein or polypeptide fragment thereof having an amino acid sequence of SEQ ID NO: 1 or a sequence of at least 77% identity therewith, wherein the Cas protein or polypeptide is capable of DNA cleavage at a temperature in the range 50°C and 100°C inclusive. The invention further provides isolated nucleic acid molecules encoding said Cas9 nucleases, expression vectors and host cells. The Cas9 nucleases disclosed herein provide novel tools for genetic engineering at elevated temperatures and are of particular value in the genetic manipulation of thermophilic organisms; particularly microorganisms.