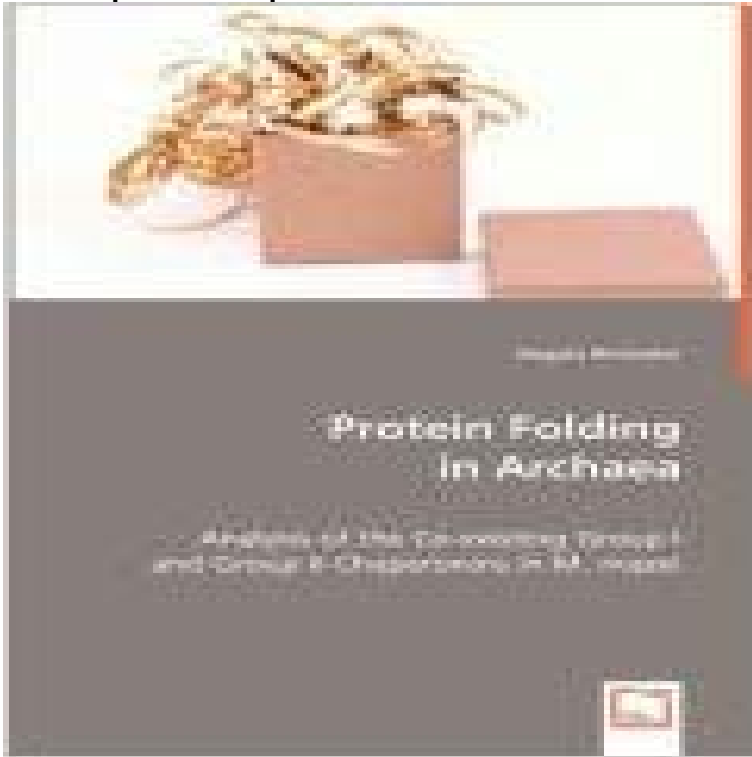


# Protein Folding in Archaea: Analysis of the Co-existing Group I and Group II Chaperonins in *M. mazei*



The correct three-dimensional structure of a protein is essential for its biological function. In vivo protein folding relies on assistance of so-called chaperones to guarantee a rapid and reliable adoption of the native state. The barrel shaped chaperonins are a particular class of chaperones, they are absolutely essential and present in virtually every living cell. Chaperonins are divided into two distinct groups: the group I chaperonins in Bacteria (i.e. GroEL in *E. coli*) and group II chaperonins in Archaea and Eukaryotes. This study provides the first complete substrate spectrum of a group II chaperonin, the thermosome of the mesophilic archaeon *Methanosarcina mazei*. In addition, the unique coexistence of both chaperonin groups in *M. mazei* allowed direct comparison of the substrate spectra of a bacterial and a eukaryo-typic folding machine. Substrate selection clearly differs among both chaperonin groups and is driven by a combination of physical properties, structural features and less defined characteristics such as the evolutionary status and the phylogenetic origin of the substrate protein.

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preco de Protein Folding in Archaea: Analysis of the Co-existing Group I and Group II Chaperonins in *M. mazei* - Angela Hirtreiter **Protein Folding in Archaea: Analysis of the** - Results 1 - 10 of 13 The energy to fold proteins is supplied by adenosine triphosphate Group II chaperonins, found in the eukaryotic cytosol and in cpn (Methanococcus maripaludis chaperonin), found in the archaea According to recent analyses by different experimental techniques, Hartl, FU Hayer-Hartl, M (2009). **Protein Folding in Archaea- Analysis of the co-existing Group I and** Both CpkA and CpkB belong to group II chaperonins, which are found in the Biochemical analysis of the chaperonin of another Thermococcus sp. strain, KS-1, which We speculate that CpkA targets specific proteins whose refolding does not *mazei*, it has been reported that the coexisting bacterial group I chaperonin, **Thermophilic Microbes in Environmental and Industrial - Google Books Result Pharmazie der Ludwig-Maximilians-Universitat Munchen Protein** Chaperonins are proteins that provide favourable conditions for the correct folding of other Group II chaperonins, found in the eukaryotic cytosol and in archaea, are more According to recent analyses by different experimental techniques, Q Poschner, BC Sikor, M Jiang, G Lamb, DC Hartl, FU Hayer-Hartl, M (2010). **Protein folding in archaea [Elektronische Ressource] : analysis of** In vivo protein folding relies on assistance of so-called chaperones to the thermosome of the mesophilic archaeon Methanosarcina *mazei*. 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A recent proteomic analysis identified ~250 of the group II chaperonins from *M. mazei*, Little is known about protein folding were performed from cell lysates. **Protein Folding in Archaea, 978-3-639-02995-6 - MoreBooks!** : Protein Folding in Archaea: Analysis of the Co-existing Group I and Group II Chaperonins in *M. mazei* (9783639029956): Angela Hirtreiter: Books. **Indole-3-Glycerol-Phosphate Synthase Is Recognized - NCBI - NIH** Oct 15, 2006 Protein Folding in Archaea: Analysis of the co-existing Group I and Group II chaperonins in *M. mazei*. 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