



**Supplementary Figure S1:** Dependence of the bacteriolytic activity of the BlpLc on some factors. a) Temperature; b) ionic strength; c) pH; d) pH stability; e) temperature stability. Values represent means  $\pm$  standard deviations of three independent measurements.

**a)**

10 20 30 40 50

MVLSAADKGNVKAAWGKVGGHAAEYGAELERMFLSFPTTKTYFPHFDSLHGSAQVK

60 70 80 90 100 110

GHGAKVAAALTKAVEHLDDLPGALSELSDLHAHKLRVDPVNFKLLSHSLLVTLASHLP

120 130 140

SDFTPAVHASLDKFLANVSTVLTSKYR

**b)**

10 20 30 40 50

MLTAEKAAVTAFWGKVKVDEVGGEALGRLLVVYPWTQRFFESFGDLSTADAVMNNP

60 70 80 90 100 110

KVKAHGKKVLDSFSNGMKHLDDLKGTFAALSELHCDKLHVDPENFKLLGNVLVVVLA

120 130 140

RNFGKEFTPVLQADFQKVVAGVANALAHRYH

**c)**

10 20 30 40 50

MGLSDGEWQQVLNVWGKVEADIAGHGQEVLRIRLFTGHPETLEKFDKFKHLKTEAEMK

60 70 80 90 100 110

ASEDLKKHGTVVLTALGGILKKKGHHEAELKPLAQSHATKHKIPIKYLEFISDAIIVHLH

120 130 140 150

SKHPGDFGADAQGAMTKALELFRNDIAAKYKELGFQG

**d)**

10 20 30 40 50

MAMAGVFLVLSFVLCGFLPDAAFGAEVDCSRFPNATDKEGKDVLCNKDLRPICGTDG

60 70 80 90 100 110

VTYTNDCLLCAYSIEFGTNISKEHDGECKETVPMNCSSYANTTSEDGKVMVLCNRAFNP

120 130 140 150 160 170

VCGTDGVTYDNECLLCAHKVEQGASVDKRHDGGRKELAAVSVDCSEYKPDCTAEDR

180 190 200 210

PLCGSDNKTYGNKCNFCNAVVESNGTLTSLSHFGKC

e)

```

      10      20      30      40      50
      |      |      |      |      |
MGSIGAASMEFCFDVFKELKVHHANENIFYCPIAIMSALAMVYLGAKDSTRTRQINKVV
 60      70      80      90      100     110
  |      |      |      |      |      |
RFDKLPFGFSDSIEAQCGTvSVNVHSSLRDILNQITKPNDVYSFSLASRLvYAEERYPILPEY
120     130     140     150     160     170
  |      |      |      |      |      |
LQCVKELYRGGLEPINFQTAADQARELINSWVESQTNGIIRNVLQPSSVDSQTAMVLVN
180     190     200     210     220     230
  |      |      |      |      |      |
AIVFKGLWEKAFKDEDvTQAMPFRVTEQESKPVQMMYQIGLFRVASMASEKMKILELPF
 240     250     260     270     280     290
  |      |      |      |      |      |
ASGTMSMLVLLPDEVSGLEQLESIIvNFEKLTvEWTSvSNVMEERKIKVYLPRMKMEEKYNL
300     310     320     330     340     350
  |      |      |      |      |      |
TSVLMAMGITDVFSSANLSGISSAESLKISQAVHAAHAEINEAGREVVvGSvAEAGVDAAS
360     370     380
  |      |      |
VSEEFRADHPFLFCIKHIATNAVLFFGRCVSP

```

**Supplementary Figure S2:** Type of bond hydrolyzed by BlpLc in different substrates. a) Bovine hemoglobin, A-chain; b) bovine hemoglobin, B-chain; c) horse myoglobin; d) ovomucoid; e) ovalbumin. Arrows, bonds hydrolyzed by the BlpLc.