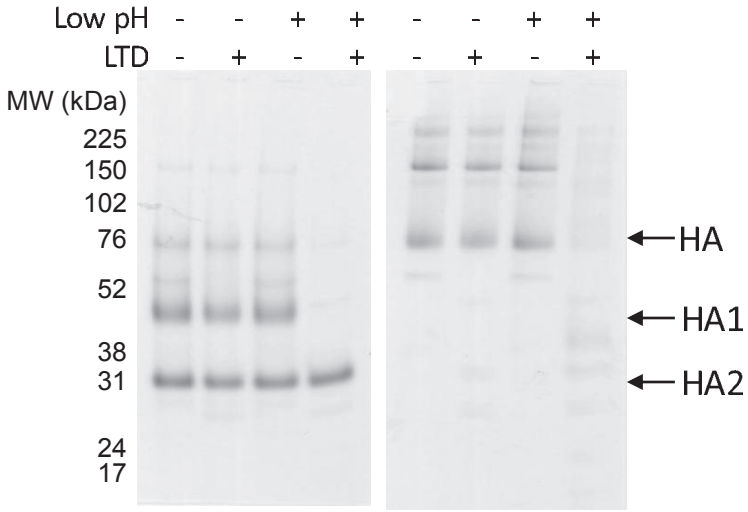
Sup. Fig. 1



Sup. Fig. 2

```
                    10        20        30        40        50        60        70        80        90       100       110       120
                     |         |         |         |         |         |         |         |         |         |         |         |
Shanghai     MNTQILVFALIAIIPTNADKICLGHHAVSNGTKVNTLTERGVEVVNATETVERTNIPRICSKGKRTVDLGQCGLLGTITGPPQCDQFLEFSADLIIERREGSDVCYPGKFVNEEALRQIL
HongKong     MNTQILVFALIAIIPTNADKICLGHHAVSNGTKVNTLTERGVEVVNATETVERTNIPRICSKGKRTVDLGQCGLLGTITGPPQCDQFLEFSADLIIERREGSDVCYPGKFVNEEALRQIL
             ************************************************************************************************************************
Prim.cons.   MNTQILVFALIAIIPTNADKICLGHHAVSNGTKVNTLTERGVEVVNATETVERTNIPRICSKGKRTVDLGQCGLLGTITGPPQCDQFLEFSADLIIERREGSDVCYPGKFVNEEALRQIL

                   130       140       150       160       170       180       190       200       210       220       230       240
                     |         |         |         |         |         |         |         |         |         |         |         |
Shanghai     RESGGIDKEAMGFTYSGIRTNGATSACRRSGSSFYAEMKWLLSNTDNAAFPQMTKSYKNTRKSPALIVWGIHHSVSTAEQTKLYGSGNKLVTVGSSNYQQSFVPSPGARPQVNGLSGRID
HongKong     RESGGIDKETMGFTYNGIRTNGVTSACKRSGSSFYAEMKWLLSNTDNAAFPQMTKSYKNTRKSPAIIVWGIHHSVSTAEQTKLYGSGNKLVTVGSSNYQQSFVPSPGARPQVNGLSGRID
             *********:*****.******.****:************************************:***************************************************
Prim.cons.   RESGGIDKE2MGFTY2GIRTNG2TSAC2RSGSSFYAEMKWLLSNTDNAAFPQMTKSYKNTRKSPA2IVWGIHHSVSTAEQTKLYGSGNKLVTVGSSNYQQSFVPSPGARPQVNGLSGRID

                   250       260       270       280       290       300       310       320       330       340       350       360
                     |         |         |         |         |         |         |         |         |         |         |         |
Shanghai     FHWLMLNPNDTVTFSFNGAFIAPDRASFLRGKSMGIQSGVQVDANCEGDCYHSGGTIISNLPFQNIDSRAVGKCPRYVKQRSLLLATGMKNVPEIPKGRGLFGAIAGFIENGWEGLIDGW
HongKong     FHWLILNPNDTVTFSFNGAFIAPDRASFLRGKSMGIQSGVQVDANCEGDCYHSGGTIISNLPFQNIDSRAVGKCPRYVKQRSLLLATGMKNVPEIPKGRGLFGAIAGFIENGWEGLIDGW
             ****:*******************************************************************************************************************
Prim.cons.   FHWL2LNPNDTVTFSFNGAFIAPDRASFLRGKSMGIQSGVQVDANCEGDCYHSGGTIISNLPFQNIDSRAVGKCPRYVKQRSLLLATGMKNVPEIPKGRGLFGAIAGFIENGWEGLIDGW

                   370       380       390       400       410       420       430       440       450       460       470       480
                     |         |         |         |         |         |         |         |         |         |         |         |
Shanghai     YGFRHQNAQGEGTAADYKSTQSAIDQITGKLNRLIEKTNQQFELIDNEFNEVEKQIGNVINWTRDSITEVWSYNAELLVAMENQHTIDLADSEMDKLYERVKRQLRENAEEDGTGCFEIF
HongKong     YGFRHQNAQGEGTAADYKSTQSAIDQITGKLNRLIAKTNQQFELIDNEFNEVEKQIGNVINWTRDSITEVWSYNAELLIAMENQHTIDLADSEMDKLYERVKRQLRENAEEDGTGCFEIF
             ********************************** ****************************************:*****************************************
Prim.cons.   YGFRHQNAQGEGTAADYKSTQSAIDQITGKLNRLI2KTNQQFELIDNEFNEVEKQIGNVINWTRDSITEVWSYNAELL2AMENQHTIDLADSEMDKLYERVKRQLRENAEEDGTGCFEIF

                   490       500       510       520       530       540       550       560
                     |         |         |         |         |         |         |         |
Shanghai     HKCDDDCMASIRNNTYDHSKYREEAMQNRIQIDPVKLSSGYKDVILWFSFGASCFILLAIVMGLVFICVKNGNMRCTICI
HongKong     HKCDDDCMASIRNNTYDHRKYREEAMQNRIQIDPVKLSSGYKDVILWFSFGASCFILLAIVMGLVFICVKNGNMRCTICI
             ***************** ************************************************************
Prim.cons.   HKCDDDCMASIRNNTYDH2KYREEAMQNRIQIDPVKLSSGYKDVILWFSFGASCFILLAIVMGLVFICVKNGNMRCTICI
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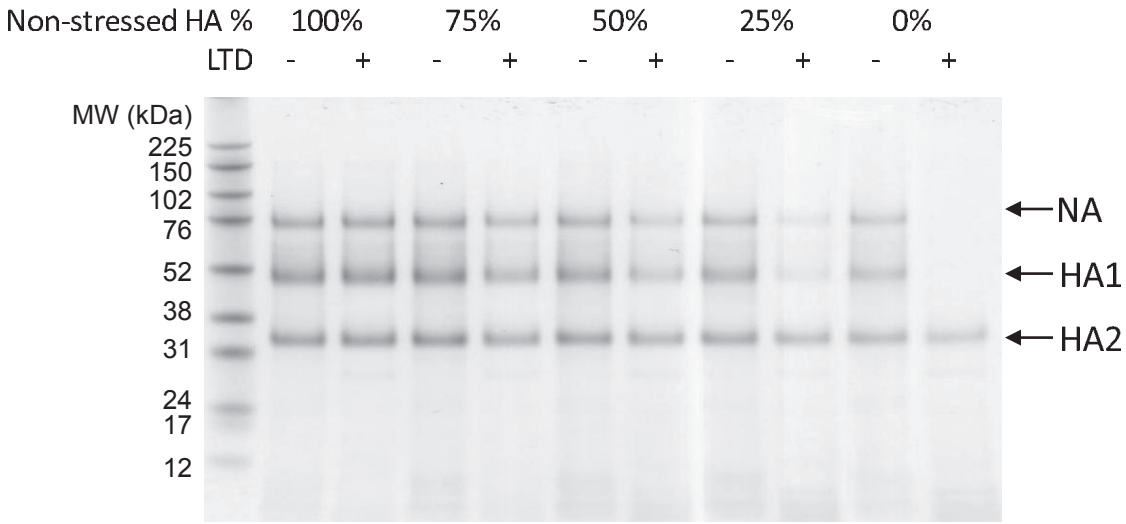
Sup. Fig. 3


Non-stressed HA %
100%
75%
50%
25%
0%
LTD
- + - + - + - + - +
MW (kDa)
225
150
102
76
52
38
31
24
17
12
NA
HA1
HA2