

Supplementary Materials

Nanostructure, Self-Assembly, Mechanical Properties, and Antioxidant Activity of a Lupin-Derived Peptide Hydrogel

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10      20      30      40      50
MSNKLLALSL FLPFLLLFCC GCFASFRQQ PQENECQFQR LNALPDNTV
      60      70      80      90     100
QSEAGTIETW NPKNDELRC GVALSRCTIQ RNLRRPFYT NAPQEIIQQ
      110     120     130     140     150
GRGIFGMIFP GCGETYEEPP ESEKGGQPRP QDRHQKVEHF KEGDIIAVPT
      160     170     180     190     200
GIPFWMYNDG QTPVVAITLI DTTNLDNQLD QIPRRFYLGS NQEQEFLQYQ
      210     220     230     240     250
EKEGGQGGQQ EGGNVLSGFD DEFLEEALSV NKEIVRNIKG KNDDREGGIV
      260     270     280     290     300
EVKGGGLKVII PPTMRPRHGR EEEEEEEED ERRGDRRRRH PHHHHHEEEE
      310     320     330     340     350
EEEEEWSHQV RRVRRPHRHH HHRKDRNGLE ETLCTMKLRH NIGESTSPDA
      360     370     380     390     400
YNPQAGRFKT LTSIDFPILG WLGLAAEHGS IYKNALFVPY YNVNANSILY
      410     420     430     440     450
VLNGSAWFQV VDCSGNAVFN GELNEGQVLT IPQNYAAAIK SLSDNFRYVA
      460     470     480     490     500
FKTNDIPQIA TLAGANSEIS ALPLEVVAHA FNLNRDQARQ LKNNNPYKFL
      510
VPPPQSQLRA VA

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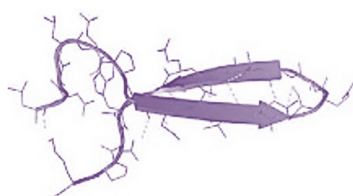


Figure 1. The α -conglutin protein sequence (11S globulin, legumin-like protein; Uniprot code Q53I54). In red the peptide sequence T13, used in this manuscript. The β -hairpin secondary structure of T13 peptides derived from parent α -conglutin protein sequence is shown below.

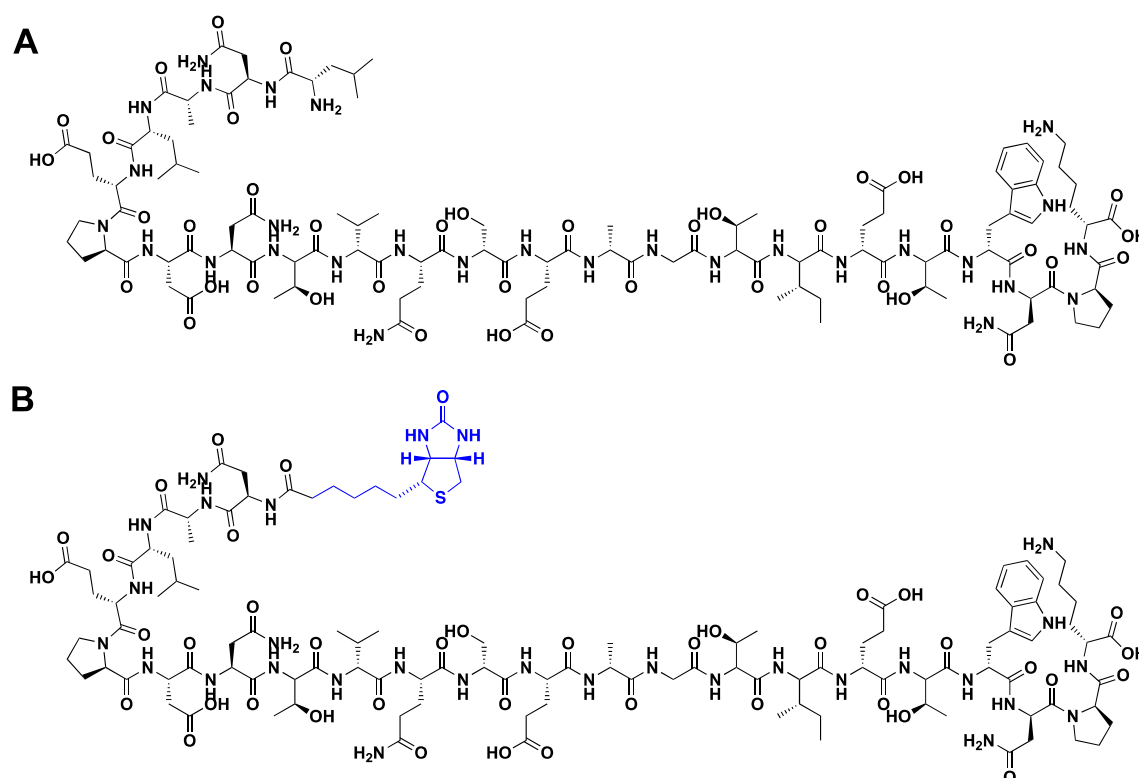


Figure 2. Chemical structures of (A) T13 and (B) BT13 peptides. In blue the linkage of biotinylation is shown.

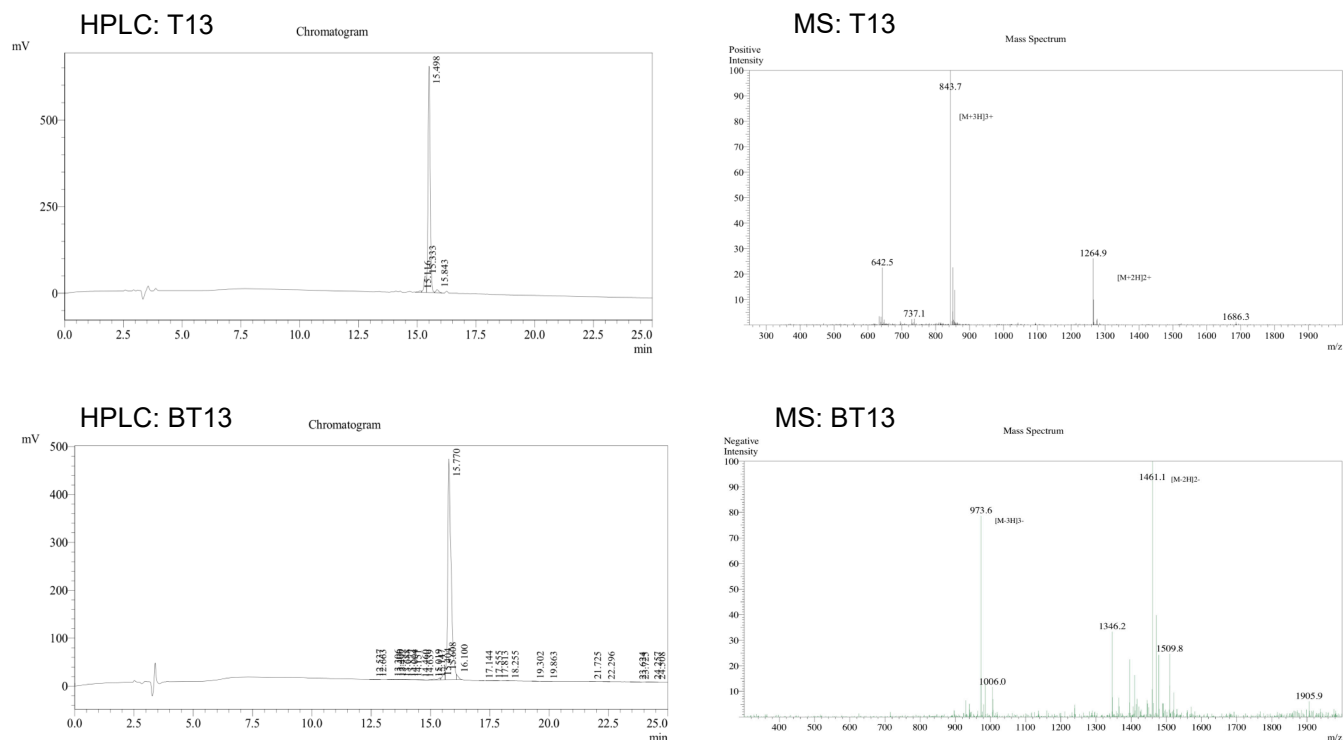


Figure 3. HPLC and MS spectra of T13 and BT13 peptides.

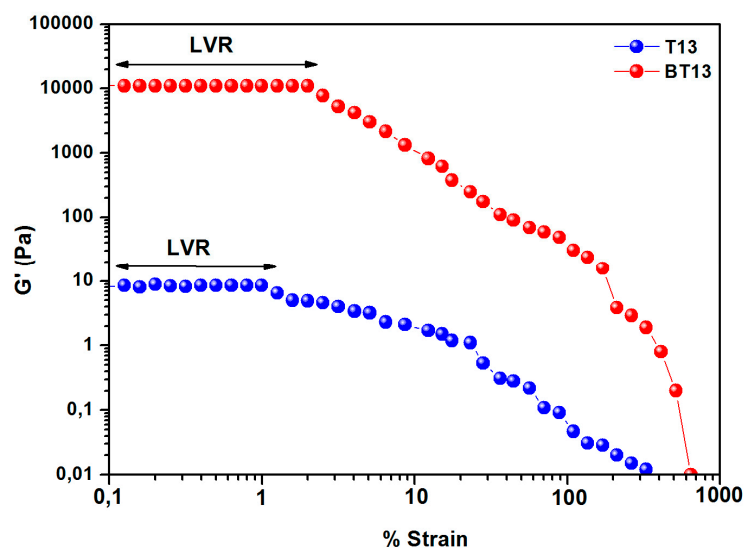


Figure 4. Linear viscoelastic regime (LVR). Strain sweep test to determine the LVR of T13 (in blue) and BT13 (in red) peptides.

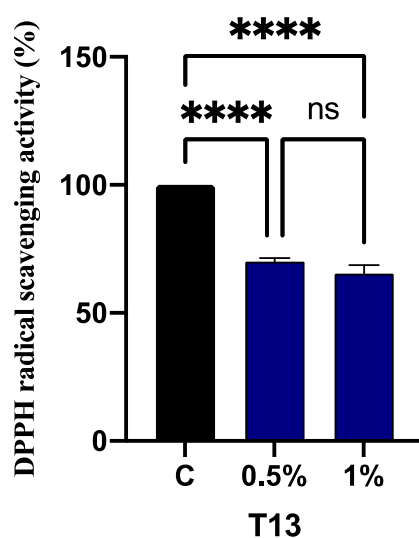


Figure 5. Antioxidant activity of T13 (in blue) as plain solution. The data points represent the means $\pm$ SD of three independent experiments in triplicate. Data were statistically analyzed by one-way ANOVA followed by Tukey's post-hoc test. (*) $p < 0.5$; (***) $p < 0.00001$. C: control sample.