

Supporting Information

The Innate Capacity of Proteins to Protect Against
Reactive Species

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Supporting information includes

SI Table 1 Peptides Identified with No Antioxidant Capacity

Peptides not AOX	Source
SEVAHR	HSA
NYEAK	HSA
TPVSDRVTK	HSA
LVTDLTK	HSA
LVNEVTEFAK	HSA
KQTALVE	HSA
EQLK	HSA
KYLYE	HSA
FQNALLVR	HSA
DAHKSE	HSA
AWAVAR	HSA
SLHTLFGDKLCTVATLR	HSA
SLHTLFGDK	HSA
VSKLVTDLTK	HSA
AACLLPK	HSA
LDELRDEGK	HSA
CASLQK	HSA
KSLHTLFGD	HSA
TYETTLEK	HSA
SEVAHRFK	HSA
QEPERNE	HSA
AEFAEVSK	HSA
ADDKETCFAEEGK	HSA
HPDYSVLLLLR	HSA
RPCFSALEVDETYVPK	HSA
KVPQVSTPTLVEVSR	HSA
FAKTCVADE	HSA
DLGEENFK	HSA
AEFAEVSKLVTDLTK	HSA
TCVADESAENCDK	HSA
ETYGEMADCCAK	HSA
QEPERNECFLQHK	HSA
VSRNLGK	HSA
SISSKLLK	HSA
NYAEAKD	HSA
ETCFAEEGK	HSA
YKAAFTECCQAADK	HSA
AAFTECCQAADK	HSA
CCAAADPHECYAK	HSA

KPLLEK	HSA
CFLQHKD	HSA
LVRPEVDVMCTAFHDNEETFLK	HSA
TCFAEEGKK	HSA
AVMDDFAAFVEK	HSA
TPVSDRVTKCCTE	HSA
FQNALLVRYTK	HSA
NECFLQHK	HSA
ICTLSEKE	HSA
VPQVSTPTLVE	HSA
VMCTAFHDNEE	HSA
VHTECCHGDLLECADDR	HSA
PLLEKSHCIAE	HSA
CCQAADK	HSA
NDIAAKYKELGFQG	Myo horse
HPGDFGADAQGAMTK	Myo horse
LFTGHPETLEK	Myo horse
IPIK	Myo horse
VEADIAGHGQEVLR	Myo horse
HGTVVLTALGGILK	Myo horse
TEAEMK	Myo horse
GHHEAELKPLAQSHATK	Myo horse
HKIPIK	Myo horse
WENGEC(+57)AQK	Beta Lact Bovine
IIAEKTKIPAVFK	Beta Lact Bovine
IDALNENK	Beta Lact Bovine
GLDIQK	Beta Lact Bovine
VLVLDTDYK	Beta Lact Bovine
VLVLDTDYKK	Beta Lact Bovine
IPAVFK	Beta Lact Bovine
SDRDK	α A-Crystallin
EFHRR	α A-Crystallin
VQEDFVEIHGKHNER	α A-Crystallin
EFHR	α A-Crystallin
HNERQDDHGYISR	α A-Crystallin
VQEDFVEIHGK	α A-Crystallin
IPSGVDAGHSER	α A-Crystallin
HFSPEDLTVKVVQEDFVEIHGK	α A-Crystallin
TVLDSGISEVR	α A-Crystallin
KQASGPER	α B-Crystallin
LEKDR	α B-Crystallin
EFHRK	α B-Crystallin
VLGDVIEVHGKHEERQDEHGFISR	α B-Crystallin

VLGDVIEVHGK	α B-Crystallin
DRFSVNLDVK	α B-Crystallin
KYRIPADCPLAITSSLSSDGVLTVNGPR	α B-Crystallin
APSWIDTGLSEMRLEK	α B-Crystallin

SI Table 2 Percent of Antioxidant Peptides with Specified Residues

Residue	Presence in Antioxidants (%)	Presence in Not Antioxidants (%)
Leu	65	55
Met	12	7
Ser	41	30
Thr	41	49
Aromatic	71	78

*Percentages are calculated based on presence of residue in peptide (multiple occurrences in one peptide was not taken into consideration)

SI Table 3 Natural Abundances of Amino Acids vs Abundances in Not Antioxidant Peptides

Amino Acid	Natural Abundance in Proteins (%)	Abundance in Not Antioxidant Peptides (%)	Deviation from Natural Abundance
Alanine	7.4	10.0	2.6
Arginine	4.2	2.6	-1.6
Asparagine	4.4	2.5	-1.9
Aspartic Acid	5.9	6.5	0.6
Cysteine	3.3	5.0	1.7
Glutamic Acid	5.8	10.6	3.8

Glutamine	3.7	2.9	-0.8
Glycine	7.4	3.7	-3.7
Histidine	2.9	3.5	0.6
Isoleucine	3.8	2.3	-1.5
Leucine	7.6	8.8	1.2
Lysine	7.2	10.7	3.5
Methionine	1.8	0.7	-1.1
Phenylalanine	4.0	3.7	-0.3
Proline	5.0	3.1	-1.9
Serine	8.1	3.2	-4.9
Threonine	6.2	7.0	0.8
Tryptophan	1.3	0.3	-1.0
Tyrosine	3.3	1.9	-1.4
Valine	6.8	6.9	0.1