

Supplementary information

Table S1 The potential bioactive peptides in fermented camel milk

Sequence	Mass	Length	Location	Peptide Ranker	Activity
AYPFIPT	807.4	7	FCM7, 17	0.8561	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, dipeptidyl peptidase III inhibitor, tubulin-tyrosine ligase inhibitor, hypouricemic
FLPPLQP	810.5	7	FCM3, 7, 15, 17, 19	0.8212	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, dipeptidyl peptidase III inhibitor, lactocepin inhibitor
FLPPLQPAVM	1111.6	10	FCM17	0.8233	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, dipeptidyl peptidase III inhibitor, lactocepin inhibitor, inhibitor of tripeptidyl peptidase II
FLPPLQPAVMVPF	1454.8	13	FCM3, 15, 17, 19	0.8947	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, dipeptidyl peptidase III inhibitor, ACE2 inhibitor, lactocepin inhibitor, inhibitor of tripeptidyl peptidase II
GGAGGF	464.2	6	FCM7	0.8597	ACE inhibitor, antioxidative, dipeptidyl peptidase IV inhibitor, inhibitor of tripeptidyl peptidase II, inhibitor of cytosol alanine aminopeptidase
GRGWNKGAHAGPTWNPI	1931.0	18	FCM3, 7, 17	0.8168	ACE inhibitor, antioxidative, dipeptidyl peptidase IV inhibitor, hypouricemic, inhibitor of tripeptidyl peptidase II
IIPPPP	632.4	6	FCM3, 15	0.8317	ACE inhibitor, anti inflammatory, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor
ILPPPP	632.4	6	FCM3, 15	0.8652	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, dipeptidyl peptidase III inhibitor, ACE2 inhibitor, lactocepin inhibitor
IPIPLP	648.4	6	FCM7	0.8357	ACE inhibitor, dipeptidyl peptidase IV inhibitor, lactocepin inhibitor
IPIPPP	632.4	6	FCM3, 7, 15, 17, 19	0.8330	ACE inhibitor, dipeptidyl peptidase IV inhibitor, anti inflammatory, alpha-glucosidase inhibitor
IPLPLP	648.4	6	FCM7	0.8422	ACE inhibitor, antioxidative, hypotensive, dipeptidyl peptidase IV inhibitor, lactocepin inhibitor

IPLPPP	632.4	6	FCM3, 7, 15, 17, 19	0.8531	ACE inhibitor, antioxidative, hypotensive, dipeptidyl peptidase IV inhibitor, lactocepain inhibitor
IPPLPP	632.4	6	FCM3, 7, 15, 19	0.8817	ACE inhibitor, anti inflammatory, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, lactocepain inhibitor
LIPPPP	632.4	6	FCM3, 15	0.8272	ACE inhibitor, anti inflammatory, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor
LIPPPPPPP	923.5	9	FCM3, 7, 15, 19	0.9007	ACE inhibitor, anti inflammatory, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, ACE2 inhibitor
LLPPPP	632.4	6	FCM3, 15	0.8461	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, inhibitor of cytosol alanyl aminopeptidase, lactocepain inhibitor
LLPPPPPPPP	923.5	9	FCM3, 7, 15, 19	0.8892	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, inhibitor of cytosol alanyl aminopeptidase, lactocepain inhibitor
LPIPLP	648.4	6	FCM7	0.8269	ACE inhibitor, dipeptidyl peptidase IV inhibitor, lactocepain inhibitor
LPIPPP	632.4	6	FCM3, 7, 15, 17, 19	0.8248	ACE inhibitor, anti inflammatory, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor
LPLPLP	648.4	6	FCM7	0.8411	ACE inhibitor, antioxidative, hypotensive, dipeptidyl peptidase IV inhibitor, lactocepain inhibitor
LPLPPP	632.4	6	FCM3, 7, 15, 17, 19	0.8533	ACE inhibitor, antioxidative, hypotensive, dipeptidyl peptidase IV inhibitor, lactocepain inhibitor, alpha-glucosidase inhibitor
LPPLPLP	745.5	7	FCM7, 15	0.9030	ACE inhibitor, antioxidative, hypotensive, dipeptidyl peptidase IV inhibitor, lactocepain inhibitor, alpha-glucosidase inhibitor
LPPLPP	632.4	6	FCM3, 7, 15, 19	0.8761	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, ACE2 inhibitor, lactocepain inhibitor
LPPLQPAVMVPF	1307.7	12	FCM3, 7, 15, 17, 19	0.8179	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, ACE2 inhibitor, lactocepain inhibitor, dipeptidyl peptidase III inhibitor, inhibitor of tripeptidyl peptidase II
NFLPPLQPAVMVPF	1568.8	14	FCM3, 7, 15, 17, 19	0.8575	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, ACE2 inhibitor, lactocepain inhibitor, dipeptidyl peptidase III inhibitor, inhibitor of tripeptidyl peptidase II
NFLPPLQPAVMVPFLQPKV M	2265.2	20	FCM7	0.8412	ACE inhibitor, antioxidative, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, ACE2 inhibitor, lactocepain inhibitor, dipeptidyl peptidase

PAPPPPPPP	865.5	9	FCM15	0.9632	III inhibitor, inhibitor of tripeptidyl peptidase II ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, inhibitor of tripeptidyl peptidase II, peptidylprolyl isomerase inhibitor
PLLPPPPPP	923.5	9	FCM3	0.8396	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, ACE2 inhibitor, lactocepin inhibitor, stimulating
PPIPIP	632.4	6	FCM3, 7, 15	0.8698	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, inhibitor of tripeptidyl peptidase II
PPLPIP	632.4	6	FCM3, 7, 15	0.8687	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, lactocepin inhibitor
PPLPLP	632.4	6	FCM3, 7, 15	0.9180	ACE inhibitor, antioxidative, hypotensive, dipeptidyl peptidase IV inhibitor, alpha- glucosidase inhibitor, lactocepin inhibitor
PQFFQL	778.4	6	FCM3, 7, 15, 17, 19	0.9120	ACE inhibitor, dipeptidyl peptidase IV inhibitor, pseudolysin inhibitor
PRPPPPPP	853.5	8	FCM19	0.9494	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, dipeptidyl peptidase III inhibitor, neurolysin inhibitor
PSPPPPPP	881.5	9	FCM15, 19	0.9567	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor
PWNHIKRYF	1259.7	9	FCM3, 7, 15, 17	0.8723	ACE inhibitor, antioxidative, dipeptidyl peptidase IV inhibitor
QFPFQFFQL	1150.6	9	FCM3, 7, 15, 17, 19	0.9491	ACE inhibitor, dipeptidyl peptidase IV inhibitor, dipeptidyl peptidase III inhibitor, pseudolysin inhibitor, ACE2 inhibitor
RPPPPPP	853.5	8	FCM7, 17	0.9471	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, neurolysin inhibitor
SPPPPPP	881.5	9	FCM3	0.9624	ACE inhibitor, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor
TQFPQF	863.4	7	FCM3	0.8201	ACE inhibitor, dipeptidyl peptidase IV inhibitor, dipeptidyl peptidase III inhibitor, ACE2 inhibitor
TQFPQFFQL	1251.6	10	FCM3, 7, 15, 17, 19	0.8173	ACE inhibitor, dipeptidyl peptidase IV inhibitor, dipeptidyl peptidase III inhibitor, ACE2 inhibitor, pseudolysin inhibitor
VMPQWW	845.4	6	FCM3, 7, 15, 17, 19	0.9366	ACE inhibitor, dipeptidyl peptidase IV inhibitor, inhibitor of tripeptidyl peptidase II
WYYPPQ	852.4	6	FCM7, 17	0.8913	ACE inhibitor, antioxidative, dipeptidyl peptidase IV inhibitor, alpha-glucosidase inhibitor, dipeptidyl peptidase III inhibitor

WYYPPQVM

1082.5

8

FCM17,
19

0.8435

ACE inhibitor, antioxidative, dipeptidyl peptidase
IV inhibitor, alpha-glucosidase inhibitor,
dipeptidyl peptidase III inhibitor, tubulin-tyrosine
ligase inhibitor, inhibitor of tripeptidyl peptidase

II

(g)



Figure S1 Distribution of intestinal microbiota at the family level. (g and h)