ACE inhibitory and anti-diabetic activity of buffalo milk and camel milk fermented using *Limosilactobacillus fermentum* (KGL4) and *Saccharomyces cerevisiae* (WBS2A) found to increase significantly with incubation periods. Inoculation rate of 2.5% (v/v) and incubation period of 48 h were optimized through OPA method. Unfermented buffalo and camel milk SDS-PAGE study showed additional protein bands than fermented buffalo and camel milk which shows high proteolytic activity of cultures in both milk have during fermentation. Peptide sequences with high peptide ranking scores (>0.450) were found in 2D-PAGE of fermented buffalo and camel milk, i.e. SCQAPIPTTMT, EMPPPK, TTMPILW, HPHPFLMPARPPK, FFNDEKIAK, ALPHMIR, IRPAFWK, LDOWLCEK, and AVYPPQR from the fermented buffalo milk, and TDVMPOWW, EKFTILLYSCHR, SSHPHYLEQL, IDSGLYLGSNYITAIR, and FDEFILSOSCAPGSDPR from the fermented camel milk. 

**Discussion**

ACE inhibitory and anti-diabetic activity of buffalo milk and camel milk fermented using *Limosilactobacillus fermentum* (KGL4) and *Saccharomyces cerevisiae* (WBS2A) found to increase significantly with incubation periods. Inoculation rate of 2.5% (v/v) and incubation period of 48 h were optimized through OPA method. Unfermented buffalo and camel milk SDS-PAGE study showed additional protein bands than fermented buffalo and camel milk which shows high proteolytic activity of cultures in both milk have during fermentation. Peptide sequences with high peptide ranking scores (>0.450) were found in 2D-PAGE of fermented buffalo and camel milk, i.e. SCQAPIPTTMT, EMPPPK, TTMPILW, HPHPFLMPARPPK, FFNDEKIAK, ALPHMIR, IRPAFWK, LDOWLCEK, and AVYPPQR from the fermented buffalo milk, and TDVMPOWW, EKFTILLYSCHR, SSHPHYLEQL, IDSGLYLGSNYITAIR, and FDEFILSOSCAPGSDPR from the fermented camel milk.

**Conclusion**

ACE inhibitory and anti-diabetic activity of buffalo milk and camel milk fermented using KGL4+WBS2A can be used as a functional food with good ACE inhibitory and anti-diabetic activity.