

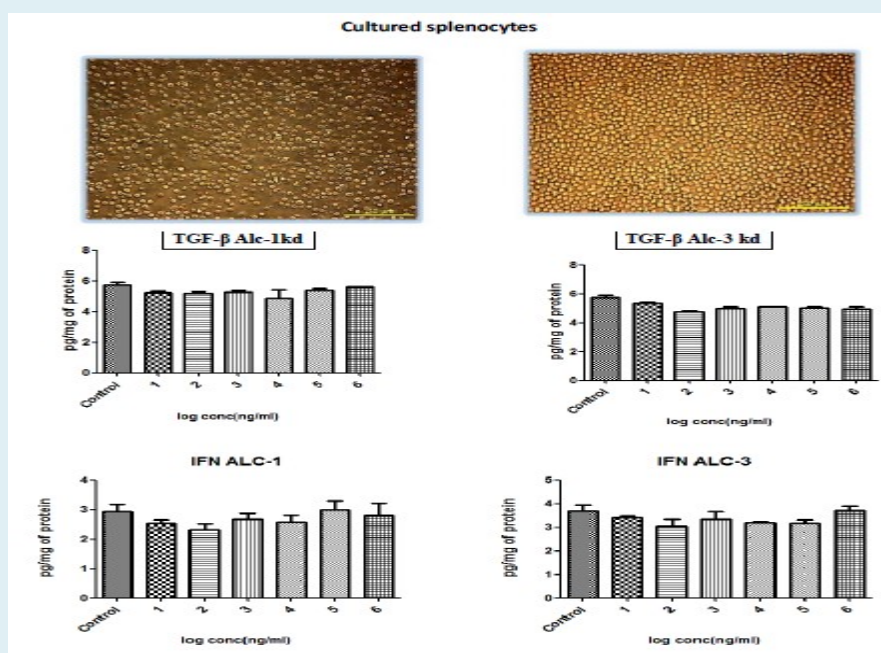
## Whey Beverage using Buffalo Casein Hydrolysates Enriched with Antioxidative and Immunomodulatory Peptides

### Salient features

- Production of buffalo casein hydrolysates enriched with potential antioxidant peptides, and their assessment for the techno-functionality, cytotoxicity in Caco-2 cell lines and immunomodulatory properties.
- Maximum immunomodulatory property of the casein hydrolysate treated with alcalase.
- Generation of potential antioxidant peptides from the casein hydrolysate treated with combination of alcalase and flavourzyme with dominant peptide, SKVLPVPQ
- Use buffalo casein hydrolysates enriched with antioxidant peptides for the production of whey beverages.
- of This preparation was used in the development of whey beverage raising its antioxidant activity by nearly fourfold.

### Advantages

- ✓ Low bitterness of the antioxidant peptide enriched buffalo casein hydrolysate.
- ✓ Four times increase in the antioxidant activity of the whey beverage.



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<b>Year</b>	2013-14
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<b>More information</b>	<p><b>Status of commercialization / Patent / Publication</b></p> <p>Sowmya, K., Bhat, M.I., Bajaj, R., Kapila, S. and Kapila, R. 2019. Antioxidative and anti-inflammatory potential with trans-epithelial transport of a buffalo casein-derived hexapeptide (YFYPQL). Food bioscience, 28: 151-163.</p> <p>Sowmya, K., Mala, D., Bhat, M.I., Kumar, N., Bajaj, R.K., Kapila, S. and Kapila, R. 2018. Bio-accessible milk casein derived tripeptide (LLY) mediates overlapping anti-inflammatory and anti-oxidative effects under cellular (Caco-2) and in vivo milieu. The Journal of nutritional biochemistry, 62: 167-180.</p> <p>Sowmya, K., Bhat, M.I., Bajaj, R.K., Kapila, S. and Kapila, R. 2019. Buffalo milk casein derived decapeptide (YQEPVLPVVR) having bifunctional anti-inflammatory and antioxidative features under cellular milieu. International Journal of Peptide Research and Therapeutics, 25(2): 623-633.</p> <p>Rao, P.S., Harisha, N.B., Bajaj, R. and Mann, B. 2018. Comparison of OPA and pH stat methods for measurement of degree of hydrolysis of alcalase and flavourzyme digested casein. Indian J. Dairy Sci. 71(1).</p> <p>Rao, P.S., Bajaj, R., Mann, B., Arora, S. and Tomar, S.K. 2016 Encapsulation of antioxidant peptide enriched casein hydrolysate using maltodextrin - gum arabic blend. J Food Science and Technology, 53: 3834–3843.</p> <p>Parmar, A., Jaiswal, A., Bajaj, R., Rajesh, K. and Mann, B. 2015. Effect of single and sequential treatment of alcalase and flavourzyme on antioxidant activity of buffalo casein hydrolysates. Indian J Dairy Science, 68(6): 566-571</p> <p>Kumar, R. 2013. In vitro techniques for evaluation of antioxidant potential of</p>

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#### **Patent**

The preparation of buffalo milk casein hydrolysates with enriched antioxidative peptides and the process thereof. Approved from the Institute Technological Management Unit (ITMU), ICAR-NDRI, Karnal. Application No. 201711023424 dt. 4.7.2017.