Summary

The result of this investigation could be summarized as follow:

1. BFM proteins are extractable by detergent or lipid solvent, types and amount of the extractable proteins dependent on the procedure employed.
2. BFM prepared under hypotonic bursting of bottom fraction organelles in distilled water and followed by extraction with 0.2% Triton X-100 yielded optimum varieties of proteins.
3. BFM prepared by bursting of bottom fraction particles in buffer containing antioxidants and protease inhibitors and followed by chloroform-methanol extraction rendered major components of BFM proteolipids of about 17 kDa and 30-35 kDa.
4. Upon Triton X-100 extraction, BFM showed relatively similar protein composition to the B-serum but upon chloroform-methanol extraction, it showed only a few number of major proteolipid components similar to those found with rubber particles.
5. By comparison with lutoidic membrane (LM) proteins obtained from the purified lutoid particles, most of the proteins found in BFM are likely to be from LM.
6. The BFM or LM proteins found to be reactive towards IgE in the serum from subjects allergic to NR latex were those of 17, 22, 30, 33, 35, 43, 58, 65 and 94 kDa proteins.
7. Among the BFM proteins, 17 and 30 kDa protein were found with high tendency to be major latex allergens.

8. The hydrophobic proteolipids of the BFM and rubber particles (RP), extractable under lipid solvent, were more alkaline-stable than those found in the soluble C-serum proteins.
9. When BFM and RP were suspended in alkaline solution, certain portions of their corresponding proteins (17, 22, 28, 30-35, 52, 65 kDa for the BFM and 14, 24 kDa for the RP) were released into the solution media and subjected to further degradation along the prolong alkaline treatment whereas the remaining intact proteins on the BFM and RP were more alkaline-stable.
10. Among the alkaline-released BFM proteins, the 30-35 kDa proteins were found to be more alkaline-stable than the 17 kDa protein.
11. Since the alkaline-stable proteins found in the mixture of non-rubber fractions (C-serum and bottom fraction), fractionated B-serum and BFM were of similar protein patterns under the SDS-PAGE, the alkaline- stable proteins found in the B-serum were, therefore, the released proteins from the BFM during freezing and thawing treatment of bottom fraction membrane bound organelles.
12. Among various fresh latex fractions, BFM and B-serum were shown as major sources of immunogenic alkaline stable-proteins.
13. The alkaline stable proteins released from BFM were identified as acidic proteins with isoelectric points (pI) of 4.7 to 6.7.
14. The alkaline-stable proteins released from BFM were found to be stable to 2 h heat treatment at 70ºC which required during prevulcanization process.

15. After field latex processing into HA latex concentrate, certain portions of BFM proteins were found associated with the major RP (zone 1).
16. The proteins (14, 20, 30, 33, 35, 43 and 55 kDa) recovered in isolated serum fraction of latex concentrate represented those of released from the rubber particles (zone 1) and the associated BFM.
17. The alkaline-stable proteins of HA latex were also found in their corresponding latex products (latex gloves) and their amount dependent on the manufacturing process.
18. Among various fractions of fresh latex, BFM and B-serum were found to be major immunogenic protein sources in ultra-low protein gloves.