

Fingerprint profiling of polysaccharide kefiran extracted from kefir grains by high-performance thin – layer chromatography

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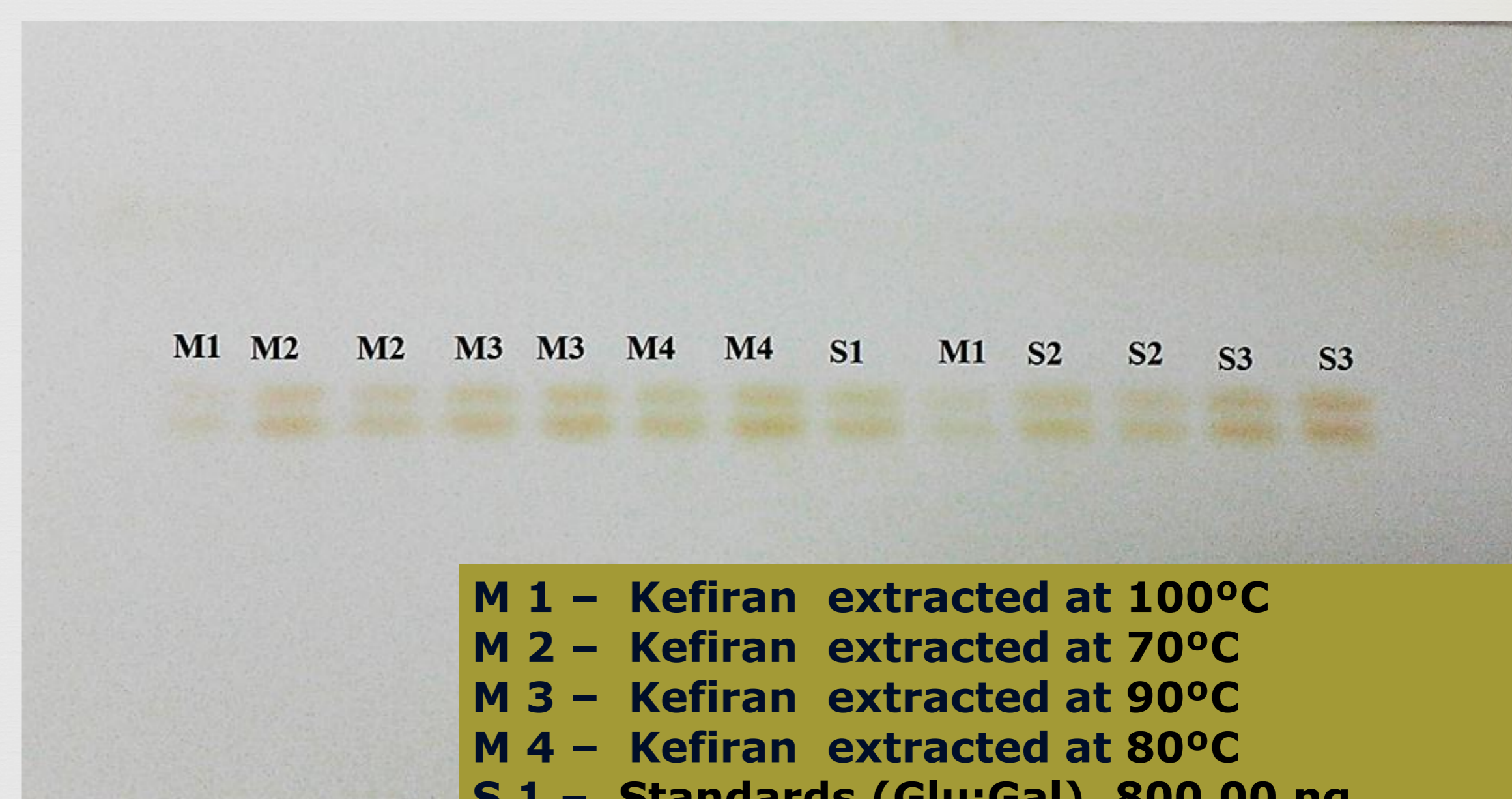
INTRODUCTION

Kefiran is a microbial and water-soluble polysaccharide obtained from the flora of kefir grains. It contains approximately equal amount of D - Glucose and D - Galactose, which could improve the viscosity and viscoelastic properties of dairy products.

Kefiran has some functional advantages such as antibacterial, antifungal and antitumor properties, it is often used in the food industry as a texturing and gelling agent.

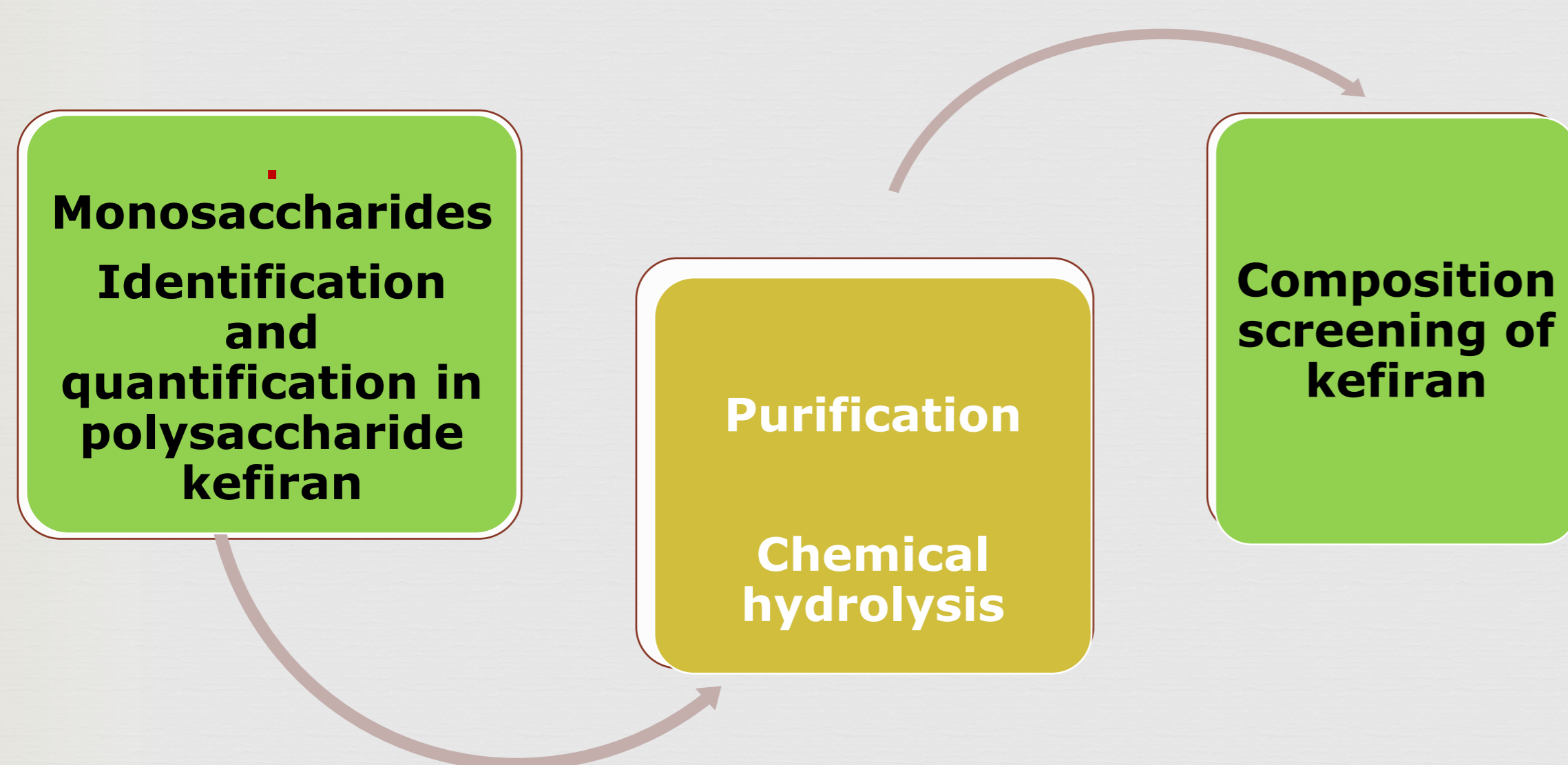
The matrix of kefiran can produce films with good appearance and satisfactory mechanical properties; it appears to have excellent potential as a film-forming agent and it can be an affordable alternative to synthetic packaging in food applications.

RESULTS AND DISCUSSIONS

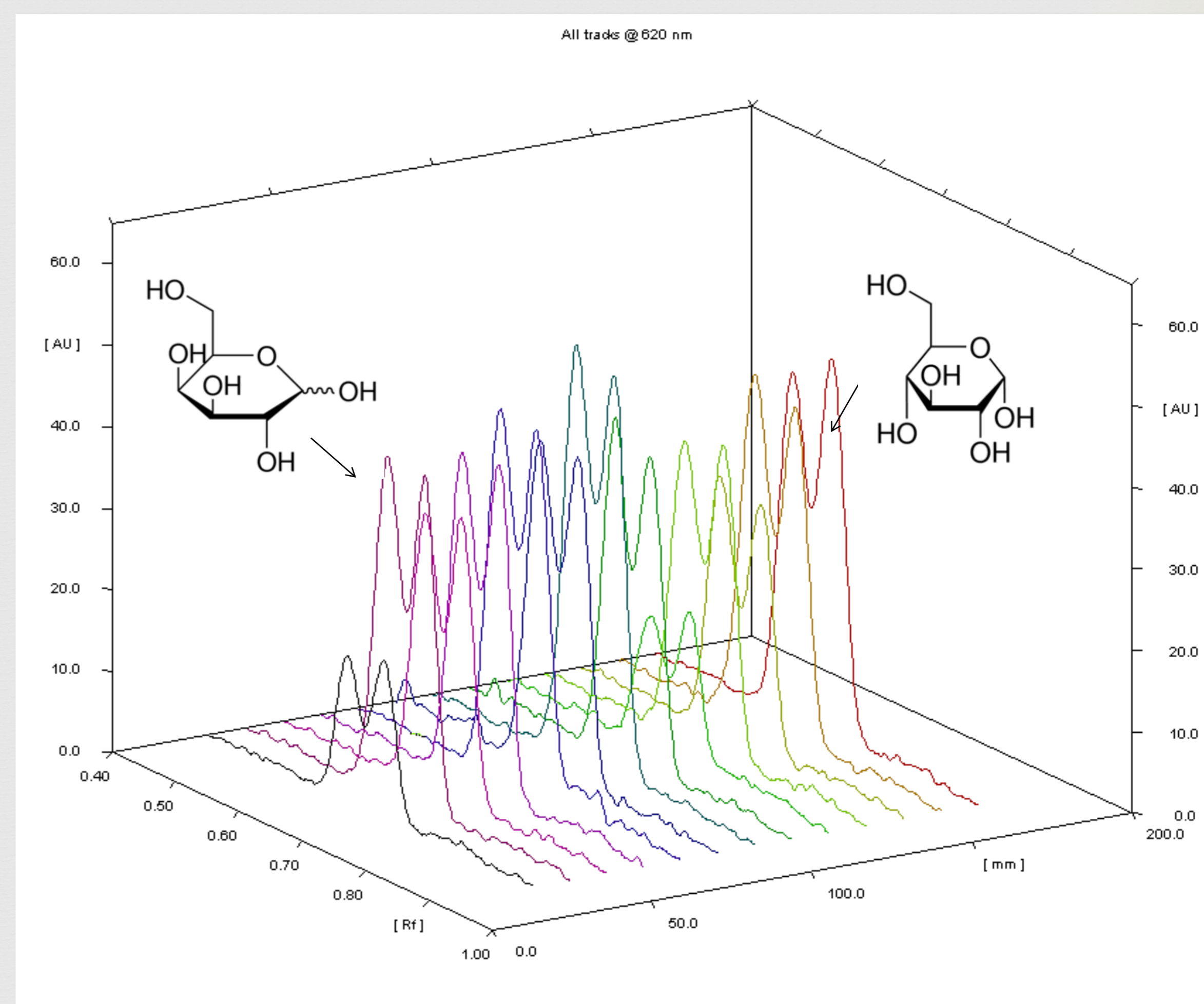
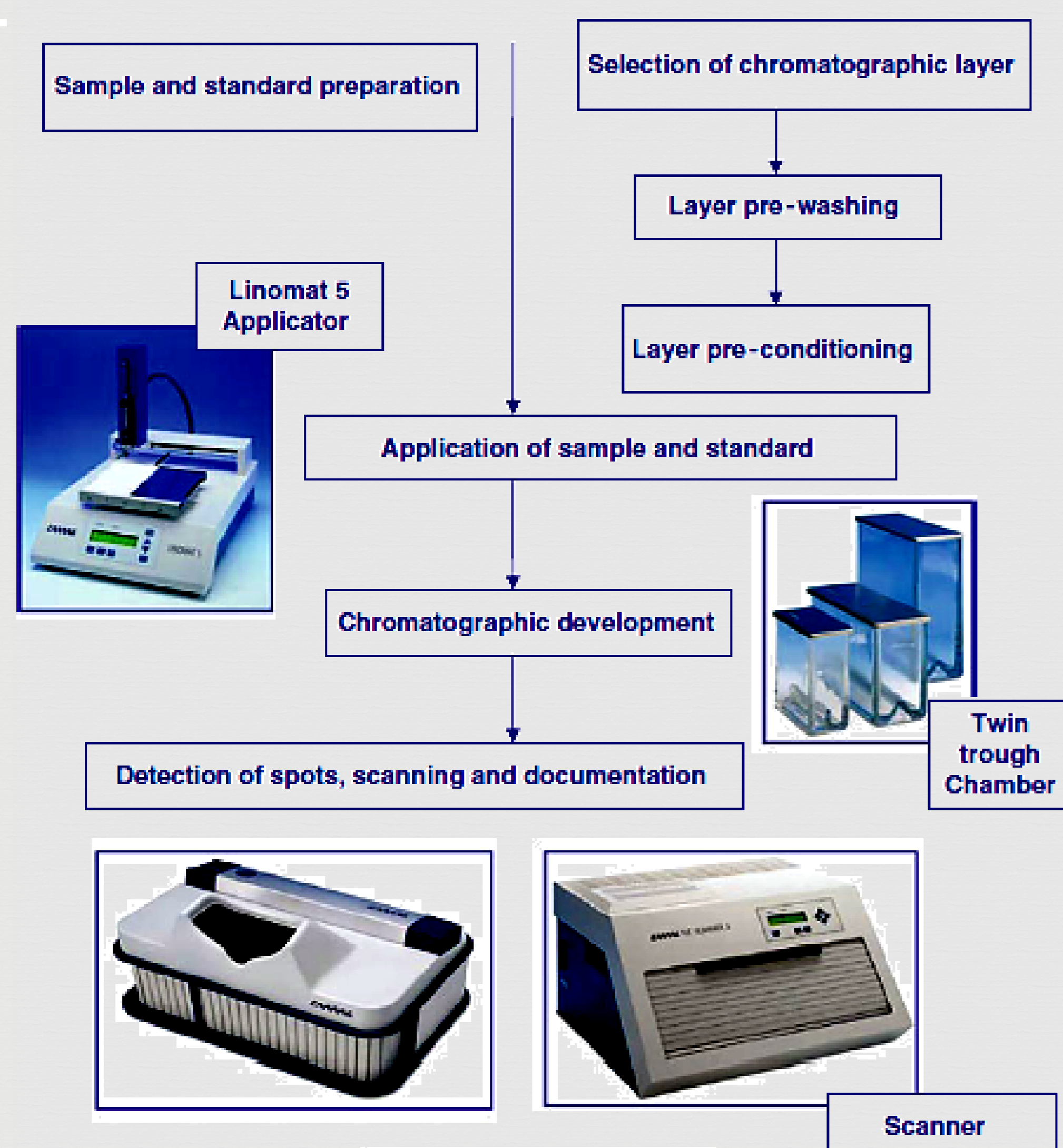


M 1 – Kefiran extracted at 100°C
M 2 – Kefiran extracted at 70°C
M 3 – Kefiran extracted at 90°C
M 4 – Kefiran extracted at 80°C
S 1 – Standards (Glu:Gal) 800.00 ng
S 2 – Standards (Glu:Gal) 1200.00 ng
S 3 – Standards (Glu:Gal) 1800.00 ng

AIME AND OBJECTIVES



MATERIALS AND METHODS



HPTLC fingerprints of monosaccharides (D-Glucose and D-Galactose), scanned at 620 nm

CONCLUSIONS

- ✓ The HPTLC method was validated by HPLC determination of kefiran monosaccharides.
- ✓ The results demonstrated that the kefiran isolated from kefir grains grown in milk is a heteropolysaccharide which contains D-glucose and D-galactose units in a ratio of 0.94:1.1.
- ✓ The physical-chemical properties of the polysaccharide kefiran depend on extraction parameters (temperature and time).

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