



Fig. 6. Thin layer chromatography detection of compounds asiaticoside

To obtain the desired active compounds can also use a different kind of medium between the growth medium and production medium. Scragg and Fowler (1991) using Murashige and Skoog medium to medium growth medium Gamborgs (B5) to medium production. Huseman *et al* (1989) using glucose and sucrose as carbon source in growth medium with concentrations of 5% and 50-10% of production mediums such as the alkaloid production of *Catharanthus roseus*.

#### Conclusion

The mesophyll cell could be used as explant for suspension culture. The highest biomass produced with best viability were found in cell isolated from second leaves treated with 0.1 % macerozyme ( $1.49 \cdot 10^{-7}$  ml). In the case of suspension culture, addition of sucrose to the production medium gave pcv 8.5%, 2.5% sucrose pcv 22%. Sucrose 5% pcv 21.5% and 7.5% pcv 15%. the asiaticoside production not only depended on sucrose alone, because in 0% sucrose it was detected

#### REFERENCES

- Indrayanto. 1987. Plant Tissue Culture. National Seminar on Secondary Metabolites. Biotechnology PAU UGM. Yogyakarta.
- Widowati, L., Pudjiastuti, Dea I., Dian S. 1992. Beberapa Informasi Khasiat Keamanan dan fitokimia Tanaman Pegagan, *Centella asiatica* (L.) Urban. Warta Tumbuhan Obat Indonesia. Vol 1. no. 2 : 39-42.
- [3] Dixon, RA 1987. Plant Cell Culture a Practical Approach. Dept. of Biochemistry Royal Holloway College.
- [4] Stafford, A. and Graham S. 1993. Plant Cell and Tissue Culture. John Wiley & Sons. New York.
- [5] Gamborg, O. L., JP Shyluk and FAShahin. 1981. Fusion Isolation and Culture of Plant Protoplasts in: A. Thorp (Edit). Plant Tissue Culture of Plant Tissue Methods and Application in Agriculture Academic Press Inc. San Francisco
- [6] Mills, and Freddi, AH 1994. Plant Cell Immobilization in alginate and polyurethane foam In Plant Cell and Tissue Culture. JW Pollard and John MW Humana Press. Clifton, New Jersey.
- [7] Hadisantosa, M.1987. Electric Field Mediated Cell fusion. New Methods And cell fusion applications in biotechnology. National Seminar on Secondary Metabolites. Biotechnology PAU UGM. Yogyakarta.
- [8] Evans, DA and JE.Bravo. 1983. Protoplast Isolation and Culture. In: Evans D.A. et all (Ed.) Handbook of Plant Cell Culture. Macmillan Publishing Company Inc, New York.
- [9] Constable, F.1984. Fusion of Protoplasts by Polyethylene Glycol (PEG) In: Vasil IK (Edit). Cell Culture and Somatics of Plant, Vol I. pp: 412-422.
- [10] Wang, D., PD Miller and MR Sondahl. 1989. Plant Regeneration From Protoplasts of the Indica Type Rice and CMS. Plant Cell reports. 8: 329-332.
- [11] Huseman, W. 1984. Photoautotrophic cell Cultures. In : Vasil I,K. (Ed) Cell Culture and Somatic Cell Genetic of Plants.