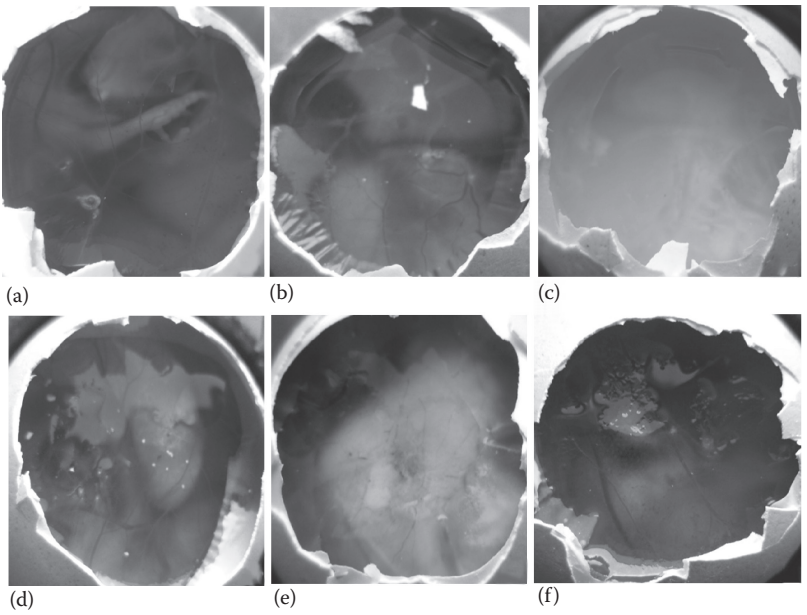

FIGURE 16.4 Antiangiogenesis of different solvent stem crude extracts: (a) control; (b) hexane; (c) ethyl acetate; (d) acetone; (e) chloroform; (f) methanol.

The *in vitro* calli extracts and the chloroform and ethyl acetate extracts showed better antiangiogenic properties (Figure 16.5). The ethyl acetate extracts of *Ardisia pyramidalis* observed better inhibitory activity (Herrera and Amor 2011), the wild plant extracts were better inhibitors compared to the *in vitro* calli extracts (Gong et al. 2013), thus making them more reliable (Figures 16.3, 16.4). This was in concordant with the reports of Moon et al. (1999), who studied the antiangiogenic activity for *Aloe vera* gel extracts and also activity for different Chinese medicinal herbs. It is apparent that no single angiogenic assay can elucidate the entire process of angiogenesis. Many technological advances have occurred recently in angiogenesis and quantification of newly-formed microvessels in laboratory animals that mimic various human diseases (Tahergorabi and Khouzai 2011).

16.4 CONCLUSION

We concluded from this work that the explants of *L. aspera* showed profuse *in vitro* biomass accumulation and root formation. The antimicrobial activity of the leaves, stems and calli extracts showed better activity and suggests that the chemical constituents of these extracts could serve as a potent source of drugs. The search and discovery of novel antiangiogenic compounds are likely to provide hope for millions of chronic disease sufferers. Since there have been no reports for micropropagation and the comparison of biological activity of *L. aspera*, this study helps the search for such compounds. In a nutshell, this work suggests that *L. aspera* should be considered as a useful source of material for human health as an antimicrobial and antiangiogenic agent.