

antibacterial activity against enteric pathogens, such as *Shigella* sp., *S. typhi* and *E. coli* (Shiney et al. 2012).

The *in vitro* calli extracts showed the maximum zone of inhibition for methanol extracts of *B. subtilis*, *V. cholera* and *E. coli*, followed by *S. aureus*. This was further supported by Girish et al. (2008) and Moin et al. (2012), who reported maximum inhibition for methanol extracts against *S. aureus*. The fungal species *C. krusei* also showed good activity, and this was in concordant with the reports of Shariff et al. (2006), who reported that the methanol extracts of *Rauwolfia tetraphylla* and *Physalis minima* callus showed antifungal activity. In this study, plant extracts (leaves and stems) and the *in vitro* calli extracts showed good activity for both gram-positive and gram-negative bacteria. This may be indicative for the presence of the broad spectrum of antibiotic compounds (Zain et al. 2012).

16.3.4 ANTIANGIOGENESIS

The search for plant-based antiangiogenic agents is carried out using bioassay-guided fractionation, wherein only the active extract and subsequent active fractions are pursued to minimize the efforts (Aruoma et al. 1998). The methanol leaf and stem extracts showed good inhibitory activity followed by chloroform and acetone (Figures 16.3, 16.4) (Table 16.4). This is supported by Nia et al. (2004) who reported methanol extracts of *Sphenocentrum jollyanum* that exhibited good antiangiogenic activity and acetone extracts showing angiogenic properties for *Boerhaavia diffusa* (Jadhav et al. 2011).

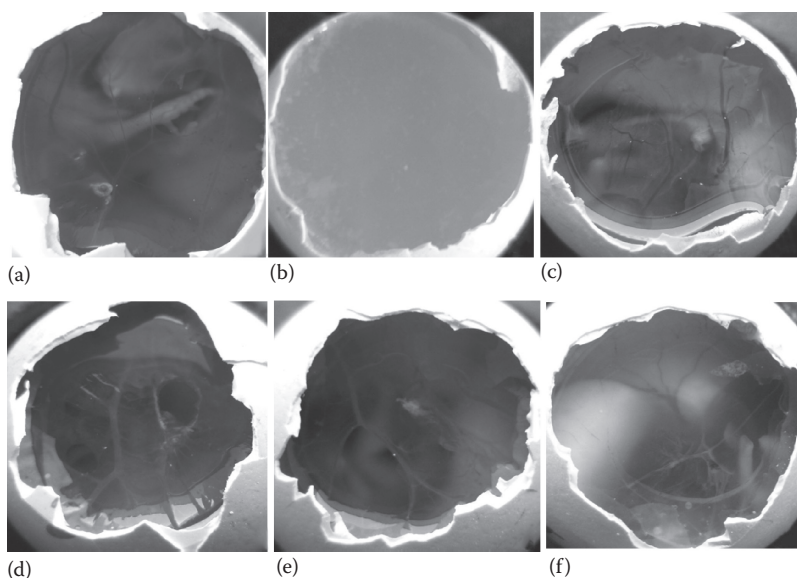


FIGURE 16.3 Antiangiogenesis of different solvent leaf crude extracts: (a) control; (b) hexane; (c) ethyl acetate; (d) acetone; (e) chloroform; (f) methanol.