Hydatidosis is a disease caused by infection of intermediate hosts with the larval stage (hydatid cyst) of the dog tapeworm *Echinococcus granulosus*. The disease is present in many African and Middle East countries (Kamhawi, 1995; Shambesh et al., 1997; Battelli et al., 2002; Sadjjadi, 2006). It is endemic in the Kingdom of Saudi Arabia affecting both humans and their domestic animals (Abu-Eshy, 1998; Al Mofleh et al., 2000; Adewunmi and Basilingappa, 2004; Fahim and Al Salamah, 2007; Ibrahim, 2010; Rashed et al., 2004). Diagnosis of the disease, particularly human cases were improved lately by the use of imaging techniques including ultrasonography, computed tomography (CT scanning) and magnetic resonance imaging (MRI) and immunological assays (WHO, 2003; Zhang et al., 2003). Immunological assays depend on hydatid cyst fluid (HCF) antigens as a source of antigenic material (Burgu et al., 2000; Kanwar et al., 1994; Musiani et al., 1978; Oriol et al., 1971; Piantelli et al., 1977; Pozzuoli et al., 1974). These immunoassays are used to detect antibodies to HCF antigens but they lack sensitivity and specificity (Babba et al., 1994). In addition, they do not discriminate between current and previous infection. Nevertheless, western blotting has been used extensively for the study of parasite systems. Enzyme-linked immunoelectrotransfer blot (EITB) was reported to be the most sensitive serological assay for confirmation of hydatidosis (Verastegui et al., 1992). It also showed high specificity due to the high resolution of HCF antigenic components (Kharebov et al., 1997).

The detection of circulating parasite antigens in host’s blood, would be an ideal approach for diagnosis of the disease and is more superior than antibody detection assay as it can provide specific parasitic diagnosis (Chaya and Parija, 2013). It is also considered a useful approach for assessment of treatment efficacy and has a high degree of specificity compared to antibody detection assays (Sadjjadi et al., 2009). Soluble antigens of other parasites circulating in body fluids have been detected using antigen-detection immunoassays (Janardhan et al. 2011; Cai et al. 2014) serving as a confirmatory guide for current infection.

In the present study, the HCF components that acted as antigens during the course of infection

### ABSTRACT

This study is designed to investigate the components of hydatid cyst fluid (HCF), the larval stage of *Echinococcus granulosus*, that acted as antigens during infection in dromedary camels and to identify the antigenic fractions specific to this metacestode. Hydatid cysts were obtained from an infected slaughtered camel in Al-Ahsa central abattoir, Kingdom of Saudi Arabia. Crude antigen extract was prepared from hydatid cyst fluid (HCF). SDS-PAGE fractionation of HCF on 7-20% acrylamide gel revealed 11 protein fractions when stained by Commassie blue stain. The molecular weight of these fractions ranged from ~180 to 22KDa. Western immunoblotting against serum from the camel infected with hydatid cyst identified 4 antigenic components of molecular weight of ~180, 55, 48 and 22KDa. Reaction with sera collected from camels with parasitic infections other than *E. granulosus* and from healthy camels free from parasitic infections failed to identify any antigenic component of HCF apart from one component of 58kDa with serum from camels suffering from mixed infection of *Nematonirdus* and strongyle worms. The rest of antigenic components identified by HCF infection serum seems to be specific to this larval stage.

**Key words**: Dromedary camels, electrophoresis, *Echinococcus granulosus*, hydatidosis, immunoblots

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