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Abstract Despite the very active coagulation system in camels, there are no previous studies on camel platelet functions. It is our aim to study camel platelet function using aggregometry, Platelet Function Analyzer (PFA100), and flow cytometry. A total of 103 camels, 19 males and 84 females, were studied. Their ages ranged from 5 to 20 years (mean±SD: 6.4±4.4 years). The results obtained were compared with healthy humans. Platelet aggregometry was undertaken in platelet-rich plasma in response to adenosine diphosphate (ADP), adrenaline, collagen, arachidonic acid, and ristocetin. Camel platelet function in whole blood was also tested using the PFA-100 and by flow cytometry using three human monoclonal antibodies (CD42, CD61, and CD62). Camel platelets failed to respond to arachidonic acid, adrenaline, and ristocetin. However, responses to ADP and collagen were obtained but were less than the human values. The addition of human plasma caused some enhancement of the aggregation responses to adrenaline and collagen but not ristocetin or arachidonic acid. However, the presence of human serum or heparin resulted in a very marked enhancement of the camel platelet aggregation responses to all agonists, except arachidonic acid. PFA-100 closure times of the collagen–ADP and the collagen–epinephrine cartridges were markedly longer than in humans. In the flow cytometry studies, camel platelets failed to respond to any of the human monoclonal antibodies with or without activation by ADP, thrombin, human plasma, or serum. This first study on camel platelet functions uncovered the distinction between camel and human platelet functions. The lack of platelet responses to certain aggregating agonists, their enhancement with human plasma and serum, as well as the prolongation of the PFA-100 closure times, add other unique characteristics to the biology of this interesting creature.

Keywords Camel platelets - Platelet aggregation - PFA-100 - Flowcytometry