

P010 The molecular characterization of the adhering junctions connecting the interstitial cells of the cardiac valves: postulate of dissociative forces and the formation of a supracellular meshwork by tentacle-like cell processes

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Cardiac valves are dominated by an extracellular matrix (ECM) characterized by collagen fiber bundles (CFBs) and interstitial mesenchymal cells occurring in small colonies or as scattered isolated cells. In view of the general interest in valves it is surprising to note our limited knowledge of valve interstitial cells (VICs). Therefore, we have examined the molecular composition of cell-cell adhering junctions of human and animal VICs, using immunofluorescence and (immuno-)electron microscopy. VICs are rich in β - and γ -actin containing microfilaments, in some cells with additional smooth muscle α -actin and bundles of vimentin intermediate filaments. VICs of small colonies are connected by *puncta adhaerentia* junctions, formed by N-cadherin anchored in cytoplasmic plaques containing α - and β -catenin as well as protein p120. Desmosomal structures and proteins reported to occur in such cells by other authors have not been identified. The most spectacular observation, however, is the interaction of tentacle-like VIC processes wrapped around paracrystalline collagen bundles, suggestive of a three-dimensional arrangement. We hypothesize that this pattern of dispersed VICs is achieved by the action of molecules promoting the destabilization of cell junctions.