Human digital merkel cells display pannexin1 immunoreactivity

- Cárcaba L.[a],
- García-Piqueras J.[a],
- García-Mesa Y.[a],
- Cobo R.[a],
- García-Suárez O.[a],
- Feito J.[a, b, c],
- Vega J.A.[a, d]

Abstract
Pannexins are channel proteins displaying functional similarities to gap junctions in vertebrates and are regarded as transmembrane ATP-releasing channels. A member of this family, denominate pannexin1, has been detected in the epidermis and cutaneous adnexal structures. Here we used immunohistochemistry to investigate whether human digital Merkel cells express this protein since ATP is postulated as a neurotransmitter in the Merkel cell-axon complexes low-threshold mecahoreceptors. Pannexin1 immunoreactivity was found in cytokeratine 20-, chromogranin A- and synaptophysin-positive cells placed at the basal layer of the epidermis. Cell displaying pannexin1 immunoreactivities were thus identified as Merkel cells and showed close contact with nerve profiles. Light pannexin1 immunoreactivity in dermal blood vessels was also verified. Present results demonstrate for the first time the expression of pannexin1 in human digital Merkel cells supporting the idea that ATP can be involved directly or indirectly in the mechanotransductional process at Merkel-axon complexes.

Author keywords
ATP; Human; Mechanotransduction; Merkel cells; Pannexin1