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Involucrin Monoclonal Antibody (SY5)

Catalog Number MA5-11803

Product data sheet

Details	
Size	500 µL
Host/Isotope	Mouse / IgG1, kappa
Class	Monoclonal
Type	Antibody
Clone	SY5
Immunogen	Human keratinocytes' involucrin
Conjugate	Unconjugated
Form	Liquid
Concentration	0.2 mg/mL
Purification	Protein A/G
Storage buffer	PBS, pH 7.4, with 0.05% BSA
Contains	0.05% sodium azide
Storage Conditions	4° C

Species Reactivity	
Species reactivity	Dog, Human, Non-human primate, Pig, Rat
Published species	Rat, Sheep, Mouse, Human, Not Applicable

Tested Applications	Dilution *
ELISA (ELISA)	Assay-dependent
Immunohistochemistry (Paraffin) (IHC (P))	1:100-1:200
Immunoprecipitation (IP)	2 µg/mL
Western Blot (WB)	1-2 µg/mL

Published Applications	
Western Blot (WB)	See 15 publications below
Immunohistochemistry (IHC)	See 20 publications below
Immunocytochemistry (ICC/IF)	See 10 publications below
Flow Cytometry (Flow)	See 1 publications below
Immunohistochemistry (Frozen) (IHC (F))	See 1 publications below

* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.

Product specific information

MA5-11803 targets Involucrin in ELISA, IF, IHC (P), IP, and WB applications and shows reactivity with Canine, Human, Non-human primate, Porcine, and Rat samples. The MA5-11803 immunogen is human keratinocytes' involucrin.

Background/Target Information

Involucrin, a component of the keratinocyte crosslinked envelope, is found in the cytoplasm and crosslinked to membrane proteins by transglutaminase. Involucrin is expressed in a range of stratified squamous epithelia, including the cornea. In normal epidermis, it is first expressed in the upper spinous layers, and in keratinocyte cultures it is expressed by all cells that have left the basal layer. Involucrin expression is abnormal in squamous cell carcinomas and premalignant lesions and is reduced in severe dysplasias of the larynx and cervix. Its gene is mapped to 1q21, among calpactin I light chain, trichohyalin, profillaggrin, loricrin, and calcyclin.

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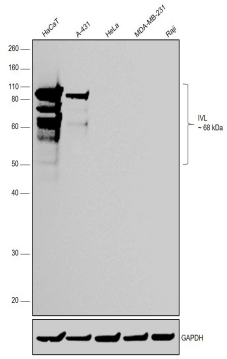
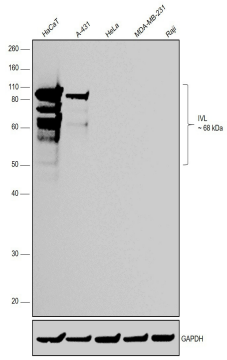
Product Images For Involucrin Monoclonal Antibody (SY5)



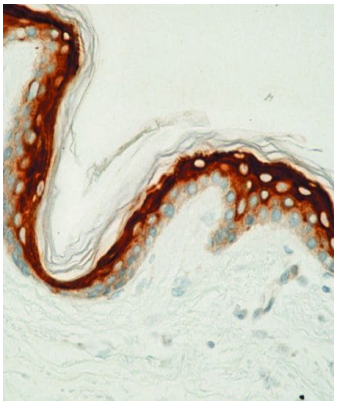
Involucrin Antibody (MA5-11803)

Antibody specificity was demonstrated by detection of differential basal expression of the target across cell lines owing to their inherent genetic constitution. Relative expression of Involucrin was observed in skin derived cell lines, HaCaT and A-431, in comparison to HeLa, MDA-MB-231 and Raji using Anti-Involucrin Monoclonal Antibody (SY5) (Product # MA5-11803) in Western Blot. {RE}



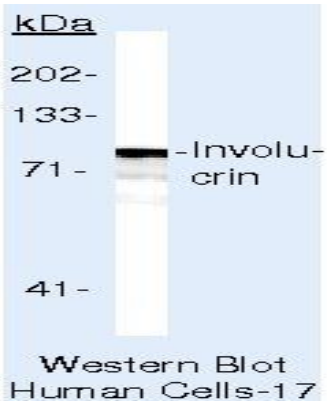
Involucrin Antibody (MA5-11803) in WB

Western blot was performed using Anti-Involucrin Monoclonal Antibody (SY5) (Product # MA5-11803) and ~68kDa, ~75kDa, ~100kDa, ~124kDa bands corresponding to Involucrin was observed across skin derived cell lines (HaCaT and A-431) and not in others. Whole Cell Extract-WCL (30 µg lysate) of HaCaT (Lane 1), A-431 (Lane 2), HeLa (Lane 3), MDA-MB-231 (Lane 4) and Raji (Lane 5) were electrophoresed using NuPAGE™ 10% Bis-Tris Protein Gel (Product # NP0301BOX). Resolved proteins were then transferred onto a Nitrocellulose membrane (Product # IB23001) by iBlot® 2 Dry Blotting System (Product # IB21001). The blot was probed with the primary antibody (1ug dilution) and detected by chemiluminescence with Goat anti-Mouse IgG (H+L) Superclonal™ Recombinant Secondary Antibody, HRP (Product # A28177, 1:4000) using the iBright FL 1000 (Product # A32752). Chemiluminescent detection was performed using Novex® ECL Chemiluminescent Substrate Reagent Kit (Product # WP20005). IVL is reported to show this pattern of expression at molecular weights >68kDa and all of these forms are not detected in the low and/or negative cell lines tested [doi:10.1242/jcs.056093; 10.1093/toxsci/kfm153]



Involucrin Antibody (MA5-11803) in IHC (P)

Formalin-fixed, paraffin-embedded human skin stained with Involucrin antibody using peroxidase-conjugate and DAB chromogen. Note cytoplasmic staining in the epidermal region.



Involucrin Antibody (MA5-11803) in WB

Western blot of Involucrin using Involucrin Monoclonal Antibody (Product # MA5-11803) on LS174T Cells.

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PubMed References For Involucrin Monoclonal Antibody (SY5)

15 Western Blot References

Species / Dilution	Summary
Rat / 1:100	MA5-11803 was used in western blot to devise a method for regulating stem cell differentiation using cell-surface ligands bound on a biomaterial surface Journal of biomedical materials research. Part A (2006; 79: 94) **"Mimicking cell-cell interactions at the biomaterial-cell interface for control of stem cell differentiation."** Author(s):Beckstead BL,Santosa DM,Giachelli CM PubMed Article URL:http://dx.doi.org/10.1002/jbm.a.30760
Human / Not Cited	MA5-11803 was used in western blot to study Akt and MAP kinase-induced survival of malignant versus normal prostate epithelial cells Cancer research (2004; 64: 6190) **"Enhanced redundancy in Akt and mitogen-activated protein kinase-induced survival of malignant versus normal prostate epithelial cells."** Author(s):Uzgare AR,Isaacs JT PubMed Article URL:http://dx.doi.org/10.1158/0008-5472.CAN-04-0968
Human / 1:1000	MA5-11803 was used in western blot to study the role of the small GTP-binding protein Rap1 in human keratinocyte proliferation Journal of cellular physiology (2003; 196: 532) **"Rap1, a small GTP-binding protein is upregulated during arrest of proliferation in human keratinocytes."** Author(s):D'Silva NJ,Mitra RS,Zhang Z,Kurnit DM,Babcock CR,Polverini PJ,Carey TE PubMed Article URL:http://dx.doi.org/10.1002/jcp.10331
Mouse / 1:100	MA5-11803 was used in Immunohistochemistry to demonstrate the negative effects of Rab25 knock-out on epidermal differentiation and skin barrier function in mice. Biomolecules & therapeutics (2019; 27: 553) **"Rab25 Deficiency Perturbs Epidermal Differentiation and Skin Barrier Function in Mice."** Author(s):Jeong H,Lim KM,Goldenring JR,Nam KT PubMed Article URL:http://dx.doi.org/10.4062/biomolther.2019.125
Human / Not Cited	MA5-11803 was used in western blot to discuss how changes in calcium levels control differentiation of HaCaT. Methods in molecular biology (Clifton, N.J.) (2015; 1195: 33) **"Growth and differentiation of HaCaT keratinocytes."** Author(s):Wilson VG PubMed Article URL:http://dx.doi.org/10.1007/7651_2013_42
Human / Not Cited	MA5-11803 was used in western blot to gain insights into the regulation of keratins International journal of molecular medicine (2012; 29: 165) **"Hsp40 regulates the amount of keratin proteins via ubiquitin-proteasome pathway in cultured human cells."** Author(s):Yamazaki S,Uchiumi A,Katagata Y PubMed Article URL:http://dx.doi.org/10.3892/ijmm.2011.826
Mouse / 1:1000	MA5-11803 was used in Western Blotting to elucidate the relationship between ZNF750 function to induce keratinocyte differentiation and tumor suppression in ESCC. Oncology letters (2021; 22:) **"Differentiation-related zinc finger protein 750 suppresses cell growth in esophageal squamous cell carcinoma."** Author(s):Ana Choi SS,Ko JM,Yu VZ,Ning L,Lung ML PubMed Article URL:http://dx.doi.org/10.3892/ol.2021.12774
Human / Not Cited	MA5-11803 was used in western blot to study the involvement of E-cadherin in keratinocyte cell-cell adhesion Molecular biology of the cell (2001; 12: 1983) **"Microtubule disruption in keratinocytes induces cell-cell adhesion through activation of endogenous E-cadherin."** Author(s):Kee SH,Steinert PM PubMed Article URL:http://dx.doi.org/10.1091/mbc.12.7.1983
Human / 1:1000	MA5-11803 was used in Western Blotting to show extracellular vesicles and miRNA are present in human skin and dermal interstitial fluid and regulate human skin homeostasis during aging. The Journal of investigative dermatology (2019; 139: 2425) **"Extracellular Vesicles in Human Skin: Cross-Talk from Senescent Fibroblasts to Keratinocytes by miRNAs."** Author(s):Terlecki-Zaniewicz L,Pils V,Bobbili MR,Lämmermann I,Perrotta I,Grillenberger T,Schwestka J,Weiß K,Pum D,Arcalis E,Schwingenschuh S,Birngruber T,Brandstetter M,Heuser T,Schosserer M,Morizot F,Mildner M,Stöger E,Tschachler E,Weinmüllner R,Gruber F,Grillari J PubMed Article URL:http://dx.doi.org/10.1016/j.jid.2019.05.015

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	MA5-11803 was used in western blot to evaluate biomaterials suitable for promoting and altering Notch signaling pathway
Human / 1:100	Journal of biomedical materials research. Part A (2009; 91: 436) **"Methods to promote Notch signaling at the biomaterial interface and evaluation in a rafted organ culture model."** Author(s):Beckstead BL,Tung JC,Liang KJ,Tavakkol Z,Usui ML,Olerud JE,Giachelli CM PubMed Article URL:http://dx.doi.org/10.1002/jbm.a.32214
Human / 1:100	MA5-11803 was used in Western Blotting to generate a library of 3D organotypic skin tissues that selectively differ in their capacity to produce glycan structures on the main types of N- and O-linked glycoproteins and glycolipids.
	Developmental cell (2020; 54: 669) **"Essential Functions of Glycans in Human Epithelia Dissected by a CRISPR-Cas9-Engineered Human Organotypic Skin Model."** Author(s):Dabelsteen S,Pallesen EMH,Marinova IN,Nielsen MI,Adamopoulou M,Rømer TB,Levann A,Andersen MM,Ye Z,Thein D,Bennett EP,Büll C,Moons SJ,Boltje T,Clausen H,Vakhrushev SY,Bagdonaite I,Wandall HH PubMed Article URL:http://dx.doi.org/10.1016/j.devcel.2020.06.039
Human / Not Cited	MA5-11803 was used in western blot to study the mechanism by which Id-1 induces cell invasiveness in immortalized epithelial cells
	Journal of cellular biochemistry (2011; 112: 157) **"Id-1 induces cell invasiveness in immortalized epithelial cells by regulating cadherin switching and Rho GTPases."** Author(s):Cheung PY,Yip YL,Tsao SW,Ching YP,Cheung AL PubMed Article URL:http://dx.doi.org/10.1002/jcb.22911
Mouse / 1:1000	MA5-11803 was used in Western Blotting to suggest the inhibition of Glut1 may offer a novel treatment strategy for psoriasis.
	Nature medicine (2018; 24: 617) **"Differential glucose requirement in skin homeostasis and injury identifies a therapeutic target for psoriasis."** Author(s):Zhang Z,Zi Z,Lee EE,Zhao J,Contreras DC,South AP,Abel ED,Chong BF,Vandergriff T,Hosler GA,Scherer PE,Mettlen M,Rathmell JC,DeBerardinis RJ,Wang RC PubMed Article URL:http://dx.doi.org/10.1038/s41591-018-0003-0
Human / Not Cited	MA5-11803 was used in western blot to study the effect of exposure to ionizing radiation on gene expression in human skin keratinocytes and fibroblasts
	Radiation research (2009; 172: 82) **"Differential gene expression in primary human skin keratinocytes and fibroblasts in response to ionizing radiation."** Author(s):Warters RL,Packard AT,Kramer GF,Gaffney DK,Moos PJ PubMed Article URL:http://dx.doi.org/10.1667/RR1677.1
Human / Not Cited	MA5-11803 was used in western blot to study the long-term maintenance of human keratinocytes in vitro
	The Journal of investigative dermatology (2005; 124: 475) **"Long-term maintenance of human keratinocytes in vitro."** Author(s):Hasskarl J,Velupillai P,Piboonniyom SO,Grace M,Münger K PubMed Article URL:http://dx.doi.org/10.1111/j.0022-202X.2004.23574.x

20 Immunohistochemistry References

Species / Dilution	Summary
	MA5-11803 was used in immunohistochemistry to identify the markers of epidermal differentiation in skin substitutes
Human / 1:100	Pediatric surgery international (2010; 26: 71) **"Transglutaminases, involucrin, and loricrin as markers of epidermal differentiation in skin substitutes derived from human sweat gland cells."** Author(s):Tharakan S,Pontiggia L,Biedermann T,Böttcher-Haberzeth S,Schiestl C,Reichmann E,Meuli M PubMed Article URL:http://dx.doi.org/10.1007/s00383-009-2517-5
Human / Not Cited	MA5-11803 was used in immunohistochemistry to investigate the efficiency of dermal gene transfer with different pseudotyped HIV-based vectors
	Gene therapy (2007; 14: 648) **"Gene transfer in human skin with different pseudotyped HIV-based vectors."** Author(s):Hachiya A,Sriwiriyanont P,Patel A,Saito N,Ohuchi A,Kitahara T,Takema Y,Tsuboi R,Boissy RE,Visscher MO,Wilson JM,Kobinger GP PubMed Article URL:http://dx.doi.org/10.1038/sj.gt.3302915
Human / 1:40	MA5-11803 was used in immunohistochemistry to evaluate the stem cell molecular markers in human limbal epithelia
	Stem cells (Dayton, Ohio) (2005; 22: 355) **"Characterization of putative stem cell phenotype in human limbal epithelia."** Author(s):Chen Z,de Paiva CS,Luo L,Kretzer FL,Pflugfelder SC,Li DQ PubMed Article URL:http://dx.doi.org/10.1634/stemcells.22-3-355

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	MA5-11803 was used in Immunohistochemistry to demonstrate the negative effects of Rab25 knock-out on epidermal differentiation and skin barrier function in mice.
Mouse / 1:100	Biomolecules & therapeutics (2019; 27: 553) **"Rab25 Deficiency Perturbs Epidermal Differentiation and Skin Barrier Function in Mice."** Author(s):Jeong H,Lim KM,Goldenring JR,Nam KT PubMed Article URL:http://dx.doi.org/10.4062/biomolther.2019.125
	MA5-11803 was used in immunohistochemistry to study the effect of penetration enhancers on barrier-related proteins in skin
Rat / 2 µg/mL	International journal of pharmaceutics (2012; 427: 293) **"An insight into the role of barrier related skin proteins."** Author(s):Wato K,Hara T,Yamana K,Nakao H,Inagi T,Terada K PubMed Article URL:http://dx.doi.org/10.1016/j.ijpharm.2012.02.014
	MA5-11803 was used in immunohistochemistry to investigate the influence of zidovudine on gingival epithelium growth
Human / 200 mg/ml	HIV medicine (2012; 13: 276) **"Effect of the HIV nucleoside reverse transcriptase inhibitor zidovudine on the growth and differentiation of primary gingival epithelium."** Author(s):Mitchell D,Israr M,Alam S,Kishel J,Dinello D,Meyers C PubMed Article URL:http://dx.doi.org/10.1111/j.1468-1293.2011.00973.x
	MA5-11803 was used in immunohistochemistry to study the expression pattern of stem cells in the bulbar conjunctival epithelium
Human / Not Cited	Journal of cellular physiology (2010; 225: 180) **"Potential localization of putative stem/progenitor cells in human bulbar conjunctival epithelium."** Author(s):Qi H,Zheng X,Yuan X,Pflugfelder SC,Li DQ PubMed Article URL:http://dx.doi.org/10.1002/jcp.22215
	MA5-11803 was used in immunohistochemistry to study the use of a defined medium containing insulin, transferrin and selenium as an alternative to fetal calf serum for the culture of epidermal equivalents
Human / Not Cited	International journal of cosmetic science (2014; 36: 427) **"Insulin-transferrin-selenium as an alternative to foetal serum for epidermal equivalents."** Author(s):Mainzer C,Barrichello C,Debret R,Remoué N,Sigaudo-Roussel D,Sommer P PubMed Article URL:http://dx.doi.org/10.1111/ics.12141
	MA5-11803 was used in immunohistochemistry to study the role of Toll-like recpeptor-2 in the activation of human gingival epithelial cells by bacterial fimbriae
Human / Not Cited	Infection and immunity (2001; 69: 7387) **"Bacterial fimbriae and their peptides activate human gingival epithelial cells through Toll-like receptor 2."** Author(s):Asai Y,Ohyama Y,Gen K,Ogawa T PubMed Article URL:http://dx.doi.org/10.1128/IAI.69.12.7387-7395.2001
	MA5-11803 was used in immunohistochemistry to use organotypic gingival keratinocyte culture to explore the effects of HIV nucleoside reverse transcriptase inhibitors on the gingival epithelium
Human / 200 mg/ml	HIV medicine (2014; 15: 196) **"HIV nucleoside reverse transcriptase inhibitors efavirenz and tenofovir change the growth and differentiation of primary gingival epithelium."** Author(s):Mitchell D,Israr M,Alam S,Dinello D,Kishel J,Jia R,Meyers C PubMed Article URL:http://dx.doi.org/10.1111/hiv.12100
	MA5-11803 was used in immunohistochemistry to develop an organotypic keratinocyte coculture system with potential for use in autologous skin grafting
Human / Not Cited	Experimental dermatology (2002; 11: 413) **"Organotypic keratinocyte coculture using normal human serum: an immunomorphological study at light and electron microscopic levels."** Author(s):Hinterhuber G,Marquardt Y,Diem E,Rappersberger K,Wolff K,Foedinger D PubMed Article URL:http://dx.doi.org/10.1034/j.1600-0625.2002.110504.x
	MA5-11803 was used in immunohistochemistry to study the terminal differentiation of umbilical cord epithelial cells
Human / 1:100	Journal of dermatological science (2005; 37: 29) **"Engraftment of umbilical cord epithelial cells in athymic mice: in an attempt to improve reconstructed skin equivalents used as epithelial composite."** Author(s):Sanmano B,Mizoguchi M,Suga Y,Ikeda S,Ogawa H PubMed Article URL:http://dx.doi.org/10.1016/j.jdermsci.2004.10.008

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	MA5-11803 was used in immunohistochemistry to study human X-linked severe combined immunodeficiency and thymic dendritic and epithelial cell development
Human / Not Cited	Clinical immunology (Orlando, Fla.) (2004; 110: 63) **"Abnormal development of thymic dendritic and epithelial cells in human X-linked severe combined immunodeficiency."** Author(s):Hale LP,Buckley RH,Puck JM,Patel DD PubMed Article URL:http://dx.doi.org/10.1016/j.clim.2003.09.002
	MA5-11803 was used in immunohistochemistry to study the regulation of epithelial cell differentiation and human thymic medulla Hassall body formation by corticosteroids
Human / Not Cited	Journal of immunology (Baltimore, Md. : 1950) (2004; 172: 617) **"Corticosteroids regulate epithelial cell differentiation and Hassall body formation in the human thymus."** Author(s):Hale LP,Markert ML PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.172.1.617
	MA5-11803 was used in immunohistochemistry to study the role of reduced stem cell activation in alopecia induced by deletion of DNA methyltransferase-1
Mouse / 1:200	The Journal of investigative dermatology (2012; 132: 2681) **"Progressive alopecia reveals decreasing stem cell activation probability during aging of mice with epidermal deletion of DNA methyltransferase 1."** Author(s):Li J,Jiang TX,Hughes MW,Wu P,Yu J,Widelitz RB,Fan G,Chuong CM PubMed Article URL:http://dx.doi.org/10.1038/jid.2012.206
	MA5-11803 was used in immunohistochemistry to study the effects of conditional epidermal knockout of HDAC-1 and -2 on murine ectodermal organ morphogenesis
Mouse / Not Cited	The Journal of investigative dermatology (2014; 134: 24) **"Disrupted ectodermal organ morphogenesis in mice with a conditional histone deacetylase 1, 2 deletion in the epidermis."** Author(s):Hughes MW,Jiang TX,Lin SJ,Leung Y,Kobielak K,Widelitz RB,Chuong CM PubMed Article URL:http://dx.doi.org/10.1038/jid.2013.283
	MA5-11803 was used in immunohistochemistry to study the expression of nestin and FABP5 in the suprabasal epidermal layer in psoriasis vulgaris
Human / 1:100	Acta dermato-venereologica (2013; 93: 39) **"Nestin expression is increased in the suprabasal epidermal layer in psoriasis vulgaris."** Author(s):Watarai A,Amoh Y,Maejima H,Hamada Y,Katsuoka K PubMed Article URL:http://dx.doi.org/10.2340/00015555-1420
	MA5-11803 was used in immunohistochemistry to characterize two clinical cases of saurian papulosis
Human / 1:500	Journal of the American Academy of Dermatology (2013; 68: e17) **"Saurian papulosis: a new clinicopathological entity."** Author(s):Molina-Ruiz AM,del Carmen Fariña M,Carrasco L,Santonja C,Rodríguez-Peralto JL,Torrelo A,Kutzner H,Requena L PubMed Article URL:http://dx.doi.org/10.1016/j.jaad.2011.06.036
	MA5-11803 was used in immunohistochemistry to examine the epithelial differentiation of human embryonic stem cells
Human / Not Cited	Tissue engineering. Part A (2010; 16: 213) **"Human embryonic stem cell-derived keratinocytes exhibit an epidermal transcription program and undergo epithelial morphogenesis in engineered tissue constructs."** Author(s):Metallo CM,Azarin SM,Moses LE,Ji L,de Pablo JJ,Palecek SP PubMed Article URL:http://dx.doi.org/10.1089/ten.TEA.2009.0325
	MA5-11803 was used in immunohistochemistry to develop a culture system for the rapid generation of high quality human autologous dermo-epidermal skin substitutes
Human / 1:100	Pediatric surgery international (2013; 29: 249) **"Optimizing in vitro culture conditions leads to a significantly shorter production time of human dermo-epidermal skin substitutes."** Author(s):Pontiggia L,Klar A,Böttcher-Haberzeth S,Biedermann T,Meuli M,Reichmann E PubMed Article URL:http://dx.doi.org/10.1007/s00383-013-3268-x

10 Immunocytochemistry References

Species / Dilution	Summary

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Human / 1:100	MA5-11803 was used in immunocytochemistry to study the ability of umbilical cord epithelial cells to differentiate and form an epidermis-type structure under appropriate conditions Journal of dermatological science (2004; 35: 199) **"Organotypic culture and surface plantation using umbilical cord epithelial cells: morphogenesis and expression of differentiation markers mimicking cutaneous epidermis."** Author(s):Mizoguchi M,Suga Y,Sanmano B,Ikeda S,Ogawa H PubMed Article URL:http://dx.doi.org/10.1016/j.jdermsci.2004.06.003
Human / 1:150	MA5-11803 was used in immunocytochemistry to study the molecular changes accompanying the KGF-induced differentiation of human amnion epithelial cells towards skin keratinocytes Burns : journal of the International Society for Burn Injuries (2013; 39: 905) **"Effects of keratinocyte growth factor on skin epithelial differentiation of human amnion epithelial cells."** Author(s):Fatimah SS,Tan GC,Chua K,Tan AE,Nur Azurah AG,Hayati AR PubMed Article URL:http://dx.doi.org/10.1016/j.burns.2012.10.019
Human / 1:40	MA5-11803 was used in immunocytochemistry to evaluate gap junction protein connexin 43 as a negative marker of the pluripotency of human limbal epithelial cells Stem cells (Dayton, Ohio) (2006; 24: 1265) **"Gap junction protein connexin 43 serves as a negative marker for a stem cell-containing population of human limbal epithelial cells."** Author(s):Chen Z,Evans WH,Pflugfelder SC,Li DQ PubMed Article URL:http://dx.doi.org/10.1634/stemcells.2005-0363
Human / 1:40	MA5-11803 was used in immunocytochemistry to investigate the possibility of ligand-bearing modified Ad5 vectors to transducing human corneal epithelial progenitor cells Experimental eye research (2006; 83: 798) **"Improved transduction of human corneal epithelial progenitor cells with cell-targeting adenoviral vectors."** Author(s):Chen Z,Mok H,Pflugfelder SC,Li DQ,Barry MA PubMed Article URL:http://dx.doi.org/10.1016/j.exer.2006.03.023
Not Applicable / 1:1,000	MA5-11803 was used in immunocytochemistry to determine the link between cell cycle control and proliferative potential of epidermal progenitor cells by the carboxy-terminus of p63 Development (Cambridge, England) (2015; 142: 282) **"The carboxy-terminus of p63 links cell cycle control and the proliferative potential of epidermal progenitor cells."** Author(s):Suzuki D,Sahu R,Leu NA,Senoo M PubMed Article URL:http://dx.doi.org/10.1242/dev.118307
Human / 1:100	MA5-11803 was used in immunocytochemistry to evaluate the application of cryogenic electrospun silk scaffold in an in vitro mucosal model Journal of biomedical materials research. Part A (2012; 100: 757) **"Low-temperature electrospun silk scaffold for in vitro mucosal modeling."** Author(s):Bulysheva AA,Bowlin GL,Klingelhutz AJ,Yeudall WA PubMed Article URL:http://dx.doi.org/10.1002/jbm.a.33288
Human / 1:200	MA5-11803 was used in immunocytochemistry to investigate the role of calprotectin in human gingival keratinocyte differentiation Journal of periodontal research (2007; 42: 1) **"Regulation of calprotectin expression by interleukin-1alpha and transforming growth factor-beta in human gingival keratinocytes."** Author(s):Hayashi N,Kido J,Kido R,Wada C,Kataoka M,Shinohara Y,Nagata T PubMed Article URL:http://dx.doi.org/10.1111/j.1600-0765.2005.00857.x
Human / Not Cited	MA5-11803 was used in immunocytochemistry to study the modulation of keratinocyte proliferation and differentialtion in three-dimensional culture by the Mybl2 transcription factor Archives of dermatological research (2014; 306: 375) **"B-Myb enhances proliferation and suppresses differentiation of keratinocytes in three-dimensional cell culture."** Author(s):Maruyama H,Ishitsuka Y,Fujisawa Y,Furuta J,Sekido M,Kawachi Y PubMed Article URL:http://dx.doi.org/10.1007/s00403-014-1450-1
Rat / 1:100	MA5-11803 was used in immunocytochemistry to investigate the ability of thymic epithelial cells to form skin Nature (2010; 466: 978) **"Microenvironmental reprogramming of thymic epithelial cells to skin multipotent stem cells."** Author(s):Bonfanti P,Claudinot S,Amici AW,Farley A,Blackburn CC,Barrandon Y PubMed Article URL:http://dx.doi.org/10.1038/nature09269

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	MA5-11803 was used in immunocytochemistry to characterize the putative epidermal stem cells from Cashmere goat fetus
Sheep / Not Cited	European journal of dermatology : EJD (2007; 17: 302) **"Isolation and characterization of putative epidermal stem cells derived from Cashmere goat fetus."** Author(s):Islam MS,Zhou H PubMed Article URL:http://dx.doi.org/10.1684/ejd.2007.0204

1 Flow Cytometry References

Species / Dilution	Summary
	MA5-11803 was used in flow cytometry to establish and characterize the immortalized human gingival keratinocyte cell lines
Human / Not Cited	Journal of periodontal research (2008; 43: 604) **"Establishment and characterization of immortalized human gingival keratinocyte cell lines."** Author(s):Gröger S,Michel J,Meyle J PubMed Article URL:http://dx.doi.org/10.1111/j.1600-0765.2007.01019.x

1 Immunohistochemistry (Frozen) References

Species / Dilution	Summary
	MA5-11803 was used in immunohistochemistry - frozen section to review structural proteins of epidermal tight junctions
Not Applicable / Not Cited	The British journal of dermatology (2007; 156: 466) **"Tight junction components occludin, ZO-1, and claudin-1, -4 and -5 in active and healing psoriasis."** Author(s):Peltonen S,Riehokainen J,Pummi K,Peltonen J PubMed Article URL:http://dx.doi.org/10.1111/j.1365-2133.2006.07642.x

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