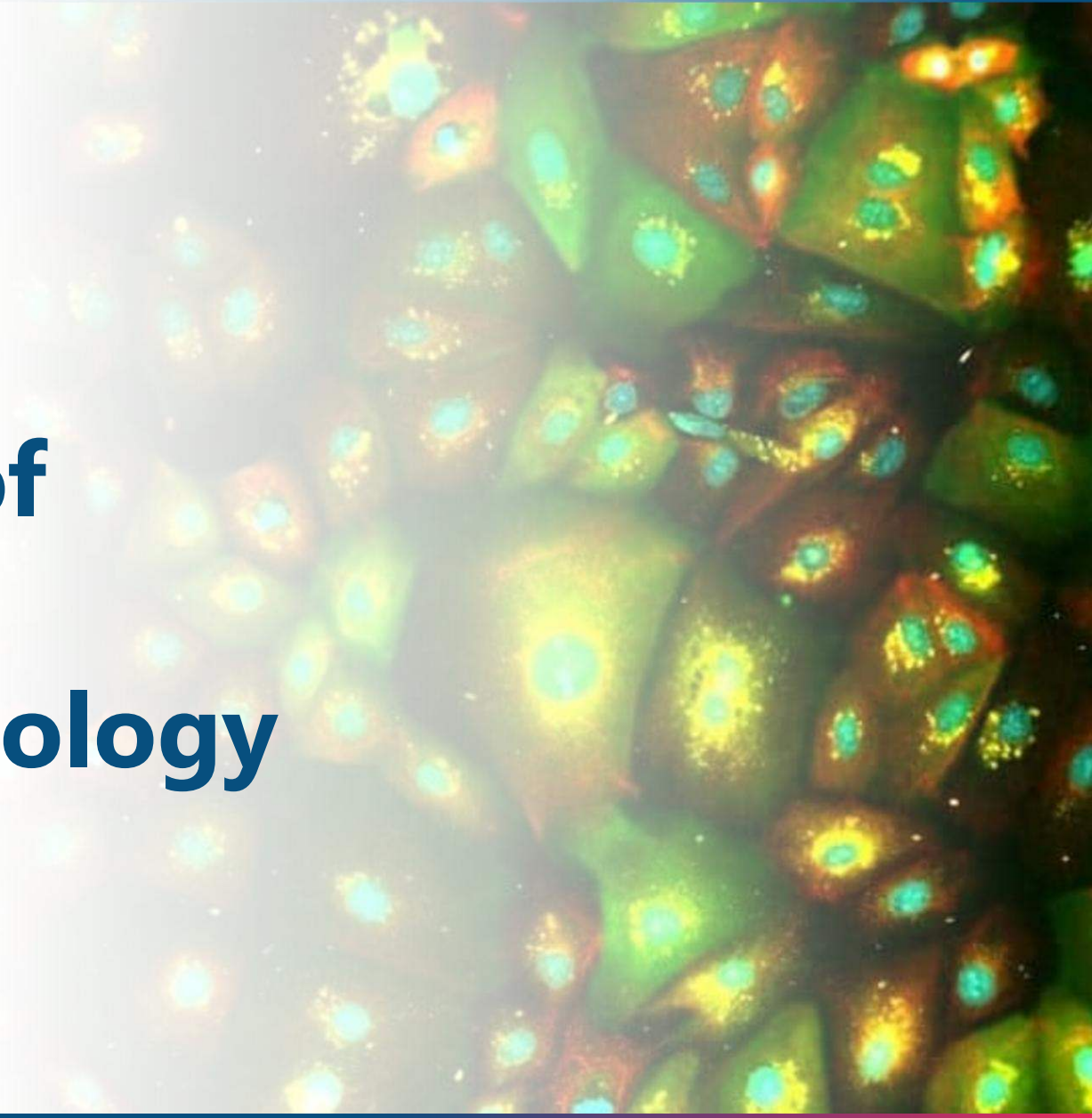
AXOL

The next generation of *in vitro* models for cosmetics and dermatology



Human iPSC-derived products and specialist services

eBook

Cells and services for **active compound testing**

Understanding The Skin
The skin acts as a barrier against pathogens, UV radiation, and chemicals, while also regulating body temperature, preventing dehydration, and producing vitamin D. The skin not only shields against environmental stressors and microbial threats but also regulates body temperature and acts as a sensory interface.

An advanced approach to active compound testing
Advanced in vitro models offer unparalleled insights into skin physiology, paving the way for effective, scientifically validated skincare solutions. As consumer demand for wellness-driven skincare continues to grow, so does the need for rigorous scientific validation. By integrating cutting-edge cell science with cosmetic innovation, we are redefining skincare - making it not only about appearance but also about true, long-lasting skin health.

iPSCs, the next step on from primary cells
Induced Pluripotent Stem Cell (iPSC) technology is a powerful tool for dermatology research and testing because it enables the creation of human skin models that closely mimic the physiology and responses of skin.

Unlike primary cells, iPSC-derived cell lines can be used to produce a consistent supply of functional end-point cells, at high throughput, meaning you don't have to waste time validating new batches of primary cells. As well as saving validation time, iPSC-derived cells are assay-ready more quickly than primary cells.

Axol, supplying cells & laboratory services
At Axol, we're here to help. If you are running active compound testing in-house, we can supply functionally active iPSC derived melanocytes, sebocytes and sensory neurons. Or outsource your project to us and we can run models of acne, pain and pigmentation.

Axol Bioscience supplies iPSC-derived cells and laboratory services for use by leading biopharma and cosmetics companies.

Axol's iPSC technology provides

- **Greater consistency**
- **Quicker results**
- **More diversity**
- **Scalable to high throughput**

From Axol, you can purchase iPSC-derived cells

- Melanocytes
- Sebocytes
- Sensory neurons

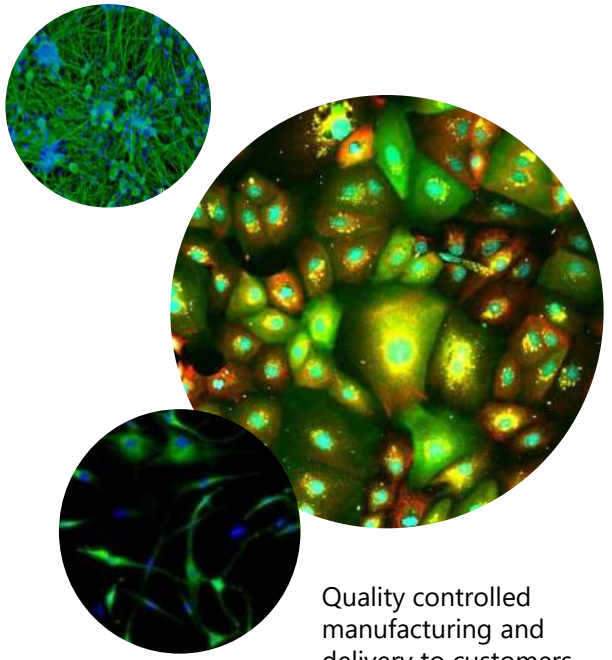
At Axol, we can run your screening and research projects

- Modelling acne & hyperseborrhea
- Modelling pain and touch
- Modelling skin pigmentation

Learn about iPSC technology

Blood or fibroblast donation ▶ Primary material reprogrammed into stem cells ▶ Stem cells differentiated into different endpoint cells ▶ Cells used for research and drug discovery

- iPSCs are induced pluripotent stem cells.
- iPSCs are created cells are made from mature cells donated by a patient or often a relative.
- The donation can be a blood sample or fibroblast.
- The sample is ‘reprogrammed’ into an iPSC using technology first created by Professor Yamanaka, winner of the 2012 Nobel Prize
- Through the differentiation process, the iPSCs can be turned into melanocytes, sebocytes, sensory neurons and other cell types.
- Importantly, the end-type cell can carry the traits seen in the original human donor making iPSC-derived cells more ‘human relevant’ than other cell types.
- Endpoint cells can be manufactured at scale and in a reproducible manner with defined functional quality control



Quality controlled manufacturing and delivery to customers

Using iPSCs in *in vitro* models in active compound testing

The benefits of using iPSCs for *in vitro* models

iPSC (Induced Pluripotent Stem Cell) technology is a powerful animal-free tool for dermatology research and testing because it enables the creation of human skin models that closely mimic the physiology and responses of skin. With a consistent supply of functional end-point cells, iPSC-derived models support the development of safer and more effective products, allowing researchers to model skin diseases, test new skin care products, and develop therapeutic interventions, without relying on animal testing.

Advanced models offer unparalleled insights into skin physiology, paving the way for effective, scientifically validated skincare solutions. As consumer demand for wellness-driven skincare continues to grow, so does the need for rigorous scientific validation. By integrating cutting-edge cell science with cosmetic innovation, we are redefining skincare—making it not only about appearance but also about true, long-lasting skin health.

An evolution of consistency and functionality

Over the last 40 years, technology and market demands have driven an evolution from the use of animal-origin cells through primary cells, immortalized cells and now iPSCs.

A comparison of cell types used in *in vitro* modelling

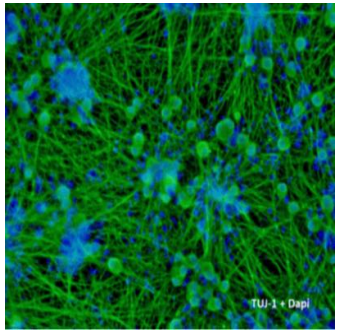
	Immortalized cell lines	Primary cells	iPSCs
Unlimited proliferation capability	Yes	No	Yes
Consistent supply	Yes	No	Yes
Quality managed manufacturing	Yes	No	Yes
Customizable Differentiation	Limited	No	Yes
Amenable to genetic manipulation	Yes	Limited	Yes
Disease-relevant models	No	Where donors available	Yes
Physiological relevant	Limited	Native-like	Yes
Diversity of donor	No	Yes	Yes
Animal free	Yes	Yes	Yes

Supporting drug discovery and cosmetic testing with cells and services

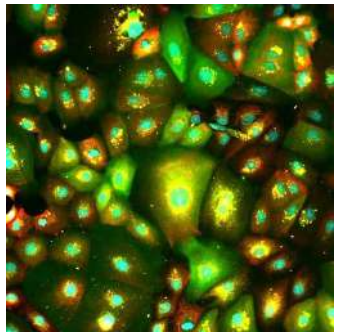
Custom cell manufacturing

Differentiation of iPSCs to sebocytes. melanocytes & sensory neurons

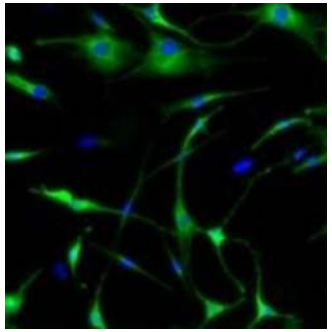
To support your research into dermatology and cosmetics, Axol offers scalable, custom manufacturing of relevant cell types, including sebocytes melanocytes, and sensory neurons. Manufacturing can be run using our iPSC lines, your own lines, or third-party lines, with full onboarding QC and completion QC for confident performance and reproducibility.



iPSC-derived sensory neurons



iPSC-derived sebocytes



iPSC-derived melanocytes

Outsourced services

Compound testing using sebocytes, melanocytes & sensory neurons

Outsource your compound testing to us. With a well-characterized and scalable high-throughput platform, Axol can perform compound testing with multiple endpoints.

- Scale-up: test dozen of products or conditions in parallel
- Cost-efficiently quantify efficacy/toxicity of ingredients/actives
- Identify claims with powerful large-scale assays
- Study mechanisms of action with specific test panels for each cell types
- Custom design of your R&D project to efficiently meet your goals

Modeling acne & hyperseborrhea with human iPSC-derived sebocytes

Sebocytes are epithelial cells that produce sebum. Many different functions are attributed to sebum: antimicrobial, antioxidant, transport of pheromones, thermoregulation, hydration, and suppleness of the skin. Sebocytes are unique tools for dermatology research, pharmacology and drug discovery, including 3D skin reconstruction models.

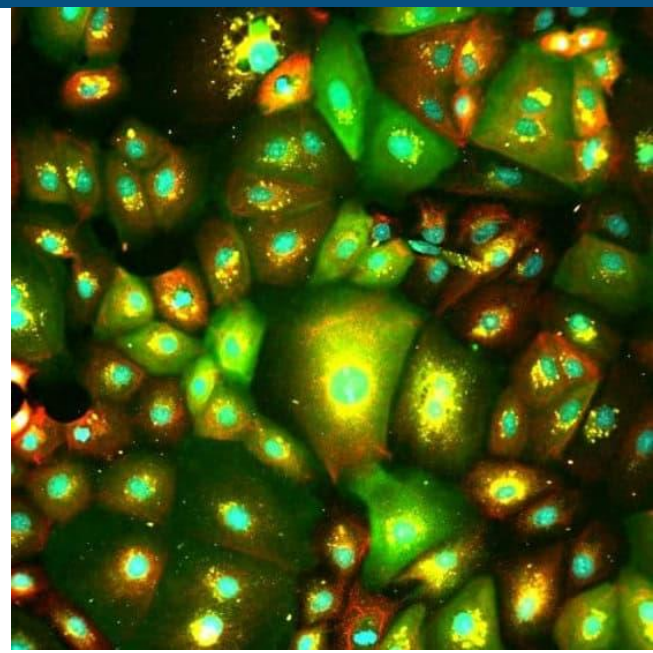
For testing and screening active pharmaceutical ingredients, and to enable breakthroughs in the field of acne and hyperseborrhea research, Axol's iPSC-derived human sebocytes can be used to develop human-relevant skin models.

Axol sebocytes display all the key functional characteristics of normal human sebocytes, including sebum synthesis, and can be used for research and development in the fields of skin care, acne research and treatment, anti-aging research, and cosmetics and therapeutics development. Sebocytes are epithelial cells specialized in sebum production. Sebocyte functions are still a topic of intense research.

iPSC-derived sebocytes can be produced in almost unlimited quantities and are the most robust and relevant tool for your screening campaigns and R&D projects.

Key highlights of our iPSC-derived sebocytes include:

- Express key sebocyte markers, notably PPARγ, KRT7 and MUC1
- Exhibit intracellular lipid droplets, and produce sebum
- Functional responses to testosterone and linoleic acid
- Display a normal karyotype with high genomic stability



Fuel your *in vitro* skin models with our human iPSC-derived sebocytes. For a quote or to order, operations@axolbio.com

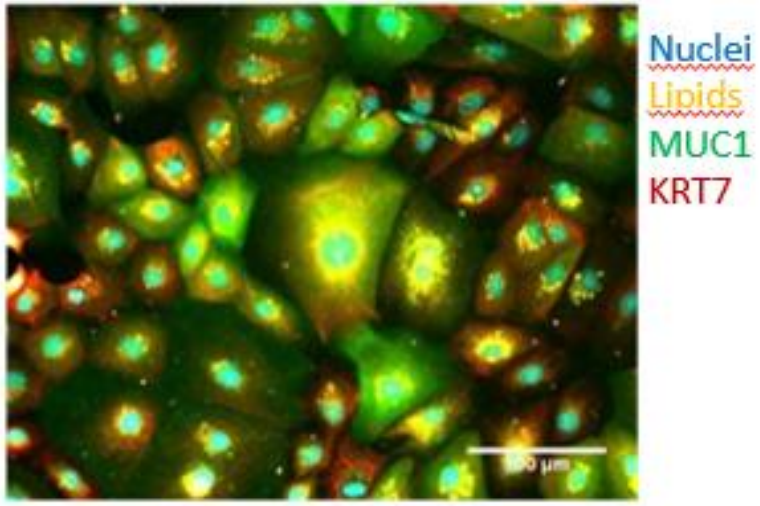
Compared to primary cells, iPSC-derived sebocytes are:

- Reproducible and consistent
- Suitable for use in high throughput 96-well plates
- Easier to prepare – consistent, high throughput production
- Assay ready in <4 days (primaries are assay ready in 7 days)

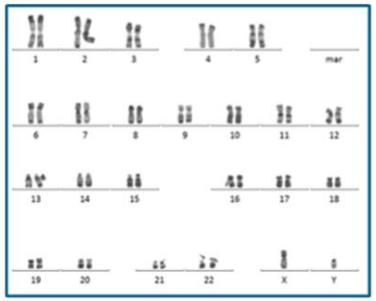
Product Code	Product Name	Product Description
PCi-SEB_CAU	Sebocytes	Human iPSC-Derived Sebocytes (≥ 2 million cells) for cosmetic research and drug discovery. Sebocytes made from iPSCs which were generated from a 30-year-old
PhenoCULT®-SEB_100	Culture media	Sebocyte Culture Media (100 ml) optimized for the culture and maintenance of iPSC-derived sebocytes for cosmetics research. Suitable for use with sebocytes.
PhenoCULT®-SEB_500	Culture media	Sebocyte Culture Media (500 ml) optimized for the culture and maintenance of iPSC-derived sebocytes for cosmetics research. Suitable for use with sebocytes.
PCi-SEB_CAU_KIT	Sebocyte Kit	Human iPSC-Derived Sebocytes (≥ 2 million cells), Sebocyte Culture Media (100ml) and Supplement A (100 µl) for cosmetics research. Sebocytes made from iPSCs generated from a 30-year-old Caucasian male donor's PBMCs.

Characterization of human iPSC-derived sebocytes

Lipid filled epithelial cells expressing sebocyte markers

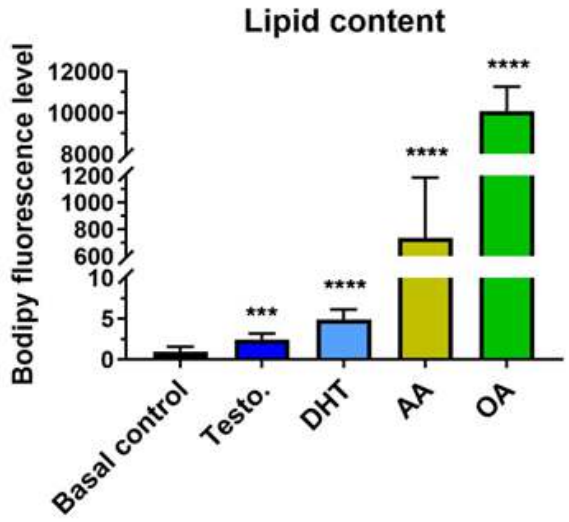


Immunofluorescent microphotograph of PCi-SEB after 7 days of culture. X20 objective. Nuclei (blue), Lipids (yellow), Keratin 7 (red), Mucin 1 (green).



Karyotype of human induced-pluripotent stem cells used to generate PCi-SEB. Chromosomes were stained with Reverse banding using Heat and Giemsa.

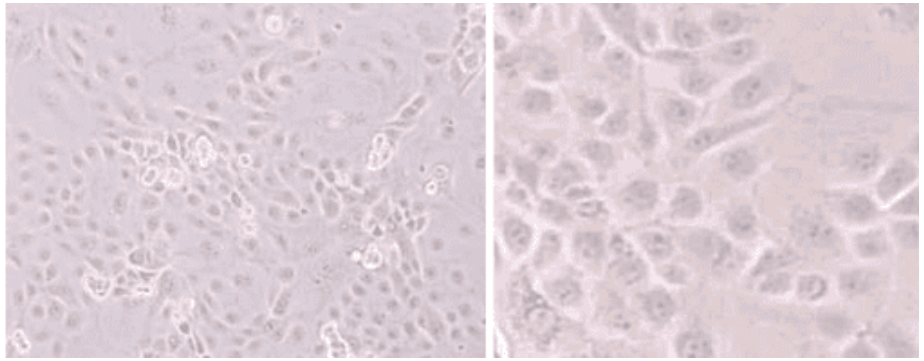
Inducible sebogenesis



Lipid content of cultured PCi-SEB treated or not (Basal control) with Testosterone (Testo.), Dihydrotestosterone (DHT), Arachidonic Acid (AA) or Oleic Acid (OA) for 48h (AA & OA) or 96h (Testo. or DHT). Bodipy fluorescence levels were analyzed with high content imaging and 20X objective, normalized to cell count and expressed as fold change compared to the basal control. Unpaired t test: ***p<0.001 ****p<0.0001. Error bars represent Standard Deviation.

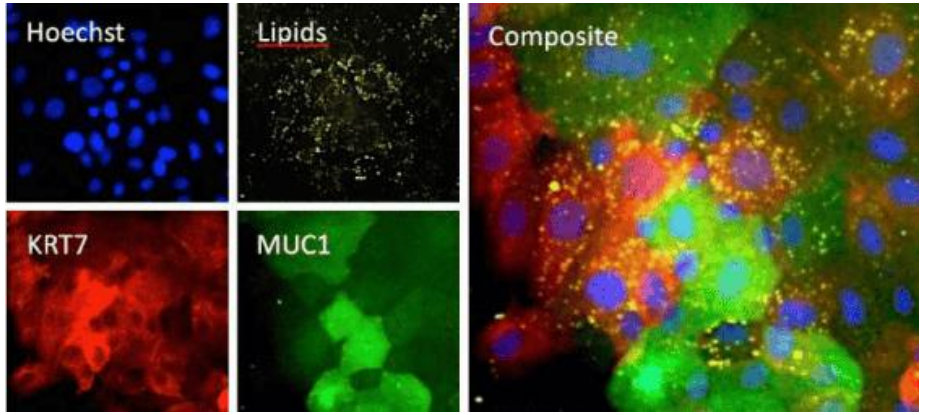
Morphology

PCi-SEB human iPSC-derived sebocytes exhibit typical epithelial morphology of primary sebocytes with heterogeneity in cell size due to lipid accumulation.



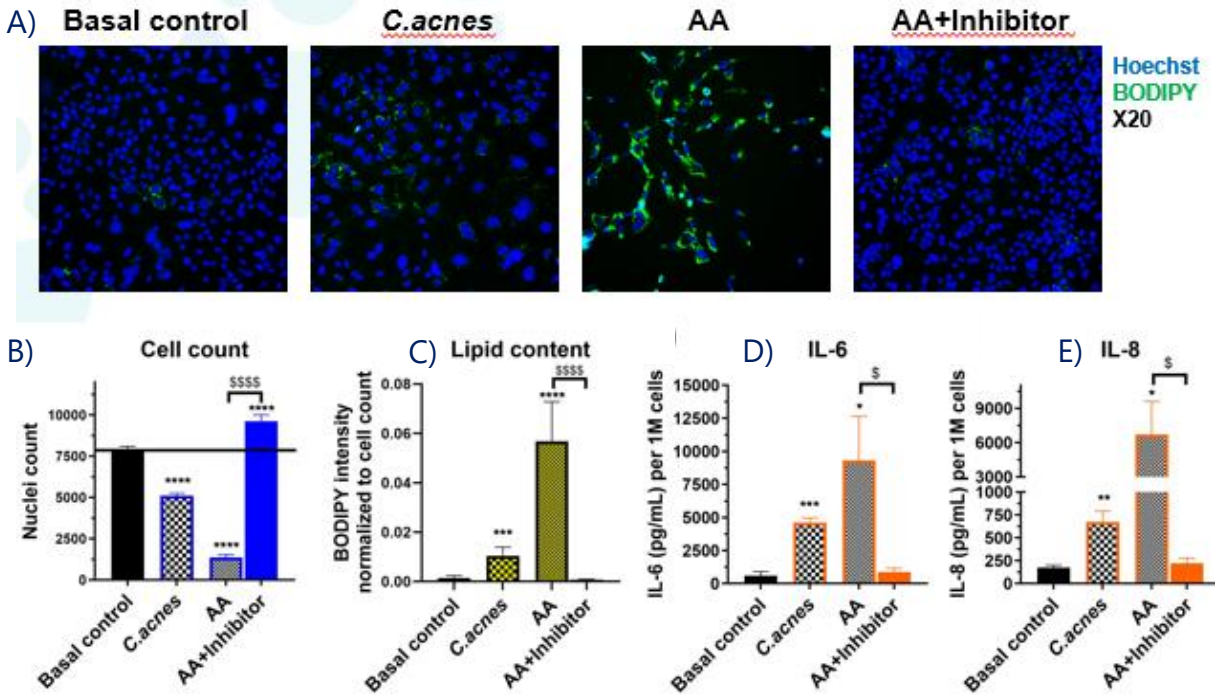
Immunocytochemistry (ICC)

PCI-SEB sebocytes express the key markers MUC1 (MUCIN 1) and KRT7 (KERATIN 7) (Fig 1



Modeling acne & hyperseborrhea with human iPSC-derived sebocytes

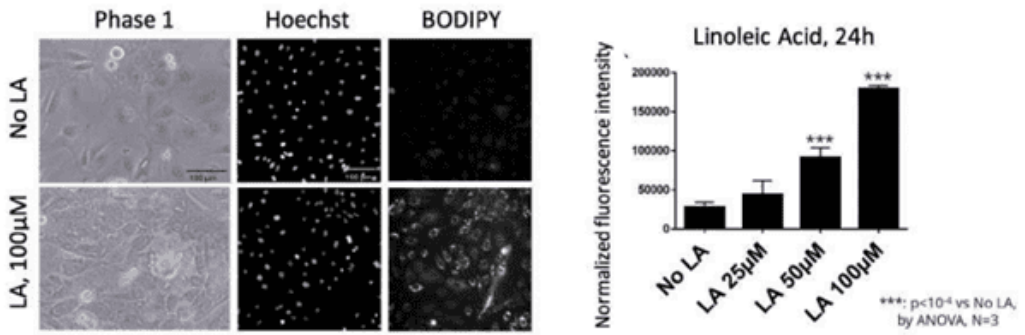
iPSC-based *in vitro* model to study acne and screen active anti-acne compounds



Treatment for 48h with C.acnes-conditioned culture medium (C.acnes), Arachidonic Acid (AA) or AA combined with a proprietary inhibitor. Cells were analyzed by high content imaging and X20 objective for Hoechst and BODIPY stainings (A-C). Inflammatory cytokines were dosed in culture supernatant by ELISA (D-E). Representative fluorescent microphotograph. Nuclei (blue), Lipids (green) (B-E). Data were normalized to cell count. Error bars represent Standard Deviation. Unpaired t test compared to the Basal control with *p<0.05 **p<0.01 ***p<0.001 ****p<0.0001 or compared to AA with $p<0.05 $$$$p<0.0001.

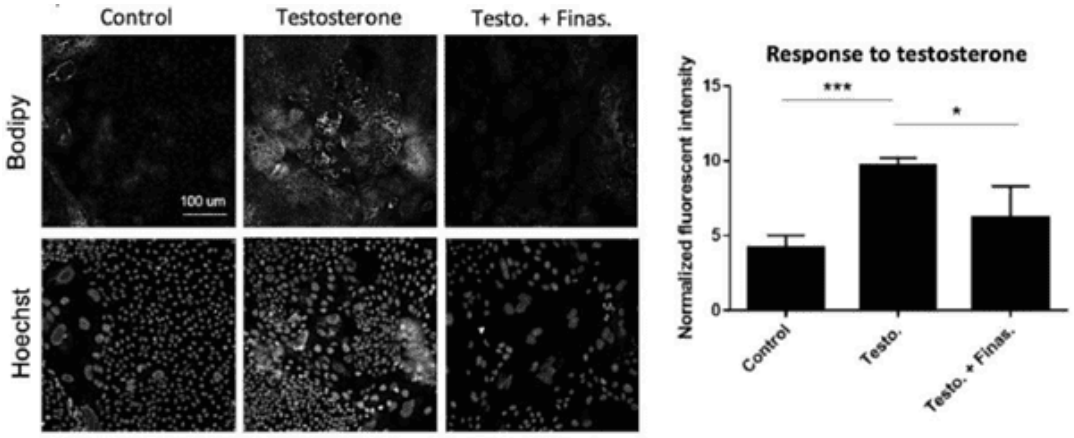
Functional relevance: response to linoleic acid

PCi-SEB respond to 24h treatment with linoleic acid (LA) by a dose-dependent (up to 5-fold) lipid accumulation (Bodipy staining).



Functional relevance: response to testosterone

PCi-SEB sebocytes respond to a 96h treatment with testosterone with a 2-fold increase in lipid content. This response is significantly inhibited by the 5-α-reductase inhibitor finasteride.



Active compound testing - **iPSC-derived sebocyte model**

Axol offers a wide range of bioassays based on our unique *in vitro* sebocyte model which is based on iPSC-derived sebocytes from multiple donors: Caucasian, African, Asian and Albino and so can be used for ethnicity specific claims validation and pathological modeling.

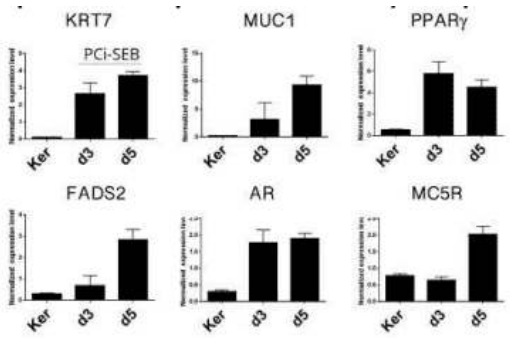
Tests are available in monolayers (from 6 well-plate to 96 well-plate) and in 3D culture using our reconstructed human sebaceous gland model.

Axol's iPSC-derived model is fully validated for active compound testing:

- Cell toxicity
- PPARγ activation
- Androgen receptor activation
- Inflammation response to LPS, Arachidonic acid, C. acnes
- Sebogenesis and lipid synthesis (eg squalene, wax ester)
- Response to cannabinoids

Phenotypic relevance: RT-qPCR

Evolution of specific markers after 3 (d3) and 5 (d5) days in culture compared to primary keratinocytes (Ker). Functional markers such as lipid activated transcription factor PPARG-γ, FADS2 (fatty acid biosynthesis pathway), androgen receptors (AR) and melanocortin 5 receptor (MC5R) are strongly expressed after 5 days.



MARKER	STIMULATION PATHWAY	METHOD	END-POINT
Lipid droplet maturation (PLIN2)	Arachidonic acid receptor (PPARg)	RT-qPCR	Relative expression level
Sebocyte maturation (MUC1)	Arachidonic acid receptor (PPARg)	RT-qPCR	Relative expression level
Wax ester synthesis (AWAT1)	Arachidonic acid receptor (PPARg)	RT-qPCR	Relative expression level
Squalene synthesis (FDFT1)	Arachidonic acid receptor (PPARg)	RT-qPCR	Relative expression level
Sapienic acid synthesis (FADS2)	Arachidonic acid receptor (PPARg)	RT-qPCR	Relative expression level
Lipoprotein lipase (LPL)	Arachidonic acid receptor (PPARg)	RT-qPCR	Relative expression level
Triglyceride synthesis (DGAT1)	Arachidonic acid receptor (PPARg)	RT-qPCR	Relative expression level
Perilipin (gene expression)	Arachidonic acid receptor (PPARg)	RT-qPCR	Relative expression level
IL-8	PPARs, COX2	RT-qPCR	Relative expression level
IL-6	PPARs, COX2	RT-qPCR	Relative expression level
TNF-a	PPARs, COX2	RT-qPCR	Relative expression level
9 markers	Arachidonic acid receptor (PPARg)	RT-qPCR	Relative expression level
Induction of sebogenesis by arachidonic acid	PPARg	Bodipy fluorescence	Fluorescence level
Viability and membrane	N.A	Calcein AM/EthD1	Nb live/dead cells
ATP	N.A	CellTiterGlo	ATP level per well
Inflammatory cytokines	PPAR, COX2	ELISA	IL-6, IL-8, MCP-1 and TNFa concentration in cell supernatant
Inflammatory cytokines	Microbiome/TLR	ELISA	IL-6, IL-8, MCP-1 and TNFa concentration in cell supernatant
Inflammatory cytokines	PPAR, COX2	ELISA	IL-1β, IFN-α2, IFN-γ, TNF-α (TNFSF2), CCL2 (MCP-1), IL-6, CXCL8 (IL-8), IL-10, IL-12p70, IL-17A, IL-18, IL-23, IL-33 concentration in cell supernatant
Inflammatory cytokines	Microbiome/TLR	ELISA	IL-1β, IFN-α2, IFN-γ, TNF-α (TNFSF2), CCL2 (MCP-1), IL-6, CXCL8 (IL-8), IL-10, IL-12p70, IL-17A, IL-18, IL-23, IL-33 concentration in cell supernatant

Human **iPSC-derived melanocytes** to support dermo-cosmetic studies

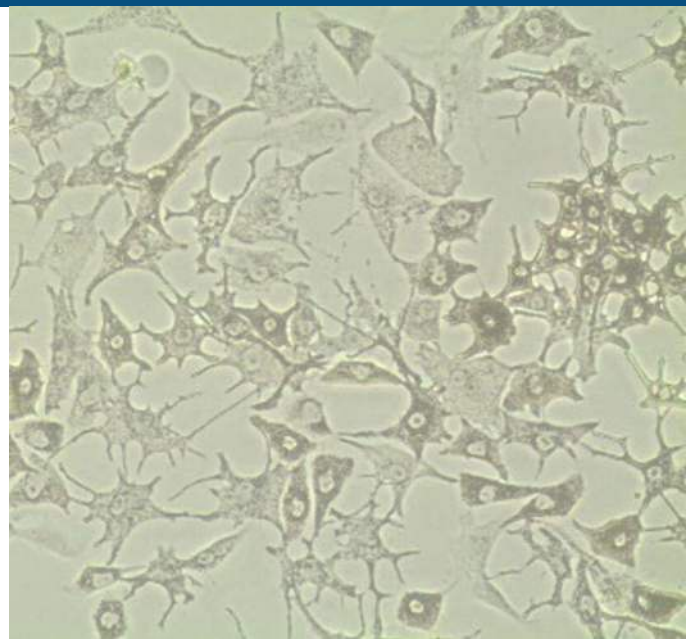
Melanocytes produce melanin in membrane-bound organelles termed melanosomes. Melanocyte models can be used for studies such as cell proliferation, toxicity, lightening or tanning. These studies can be performed for research or for screening new active cosmetic ingredients.

Compared to primary cells, iPSC-derived melanocytes are:

- Reproducible and consistent
- Suitable for use in high throughput 96-well plates
- Easier to prepare – consistent, high throughput production
- Functional end point through melanogenesis
- Assay ready in 5 days (primaries are assay ready in 7 days)

Key highlights of our iPSC-derived melanocytes include:

- Are dendritic and pigmented, adherent cells
- Express key melanocyte markers (e.g. PAX3, MITF, PMEL17, TRYP1)
- Produce melanin
- Demonstrate melanosome transfer to keratinocytes
- Available from Caucasian, African, Asian and Albino donors



Fuel your *in vitro* skin models with our human iPSC-derived melanocytes. For a quote or to order, operations@axolbio.com

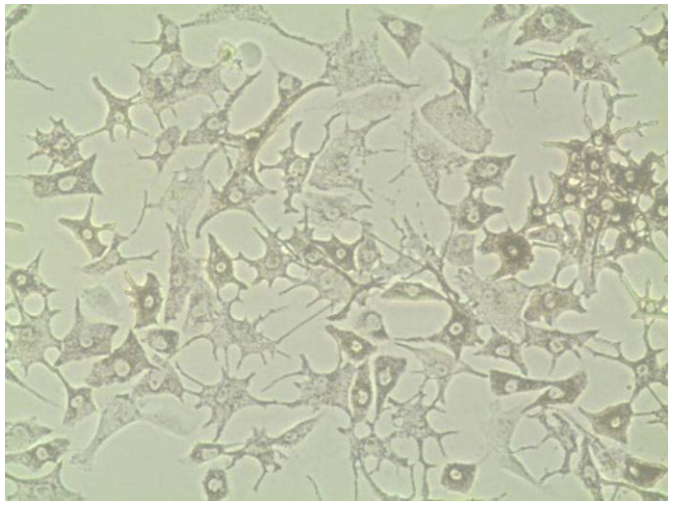
Product Code	Product Name	Product Description
PCi-MEL_CAU_1M	Human iPSC-derived Melanocytes, Caucasian donor,≥ 1 M cells	Human iPSC-derived Melanocytes,≥ 1 M cells for cosmetic research and drug discovery. Generated from iPSCs which were generated from a 30 year old Caucasian male donor's PBMCs.
PCi-MEL_AFR_1M*	Human iPSC-derived Melanocytes, African donor,≥ 1 M cells	Human iPSC-derived Melanocytes,≥ 1 M cells for cosmetic research and drug discovery. Generated from iPSCs which were generated from a 26 year old African female donor's fibroblasts.
PCi-MEL_ASI_1M*	Human iPSC-derived Melanocytes, Asian donor,≥ 1 M cells	Human iPSC-derived Melanocytes,≥ 1 M cells for cosmetic research and drug discovery. Generated from iPSCs which were generated from a 52 year old Asian female donor's fibroblasts.
MEL_ALB_1M*	Human iPSC-derived Melanocytes, Albino (OCA1) donor,≥ 1 M cells	Human iPSC-derived Melanocytes, Albino (OCA1) donor, ≥ 1 M cells for cosmetic research and drug discovery.
PCi-MEL_CAU_KIT	Human iPSC-derived Melanocytes (All Phenotypes), Cells, Media, Supplements, ≥ 1M cells	Human iPSC-Derived Melanocytes, Caucasian donor (≥ 1 M), Melanocyte Culture Media (100ml) and Supplement A (100 µl) for cosmetics research.
PhenoCULT®-MEL_100	Melanocyte Culture Media, 100 ml, + Supplement (400 µL)	Melanocyte Culture Media (100 ml) optimized for the culture and maintenance of iPSC-derived Melanocytes for cosmetics research. Suitable for use with PCi-MEL_CAU_1M, PCi-MEL_AFR_1M, PCi-MEL_ASI_1M, PCi-MEL_ALB_1M
PhenoCULT®-MEL_500	Melanocyte Culture Media, 500 ml, + Supplement (5 x 400 µL)	Melanocyte Culture Media (500 ml) optimized for the culture and maintenance of iPSC-derived Melanocytes for cosmetics research. Suitable for use with PCi-MEL_CAU_1M, PCi-MEL_AFR_1M, PCi-MEL_ASI_1M, PCi-MEL_ALB_1M

*not available for purchase, only for service project use.

Characterization of human iPSC-derived melanocytes

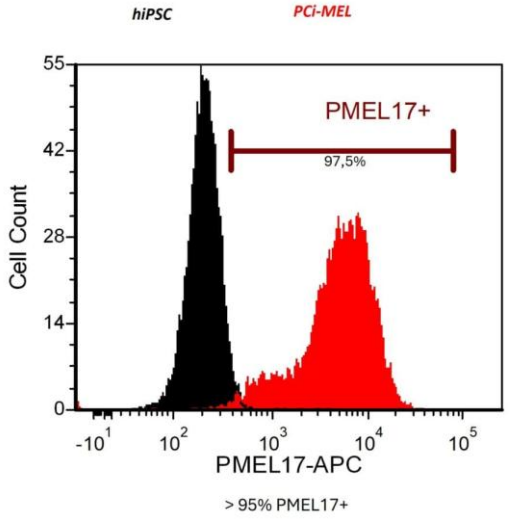
Morphology

PCi-MEL melanocytes were cultured for 5 days. Representative brightfield images. X20 objective



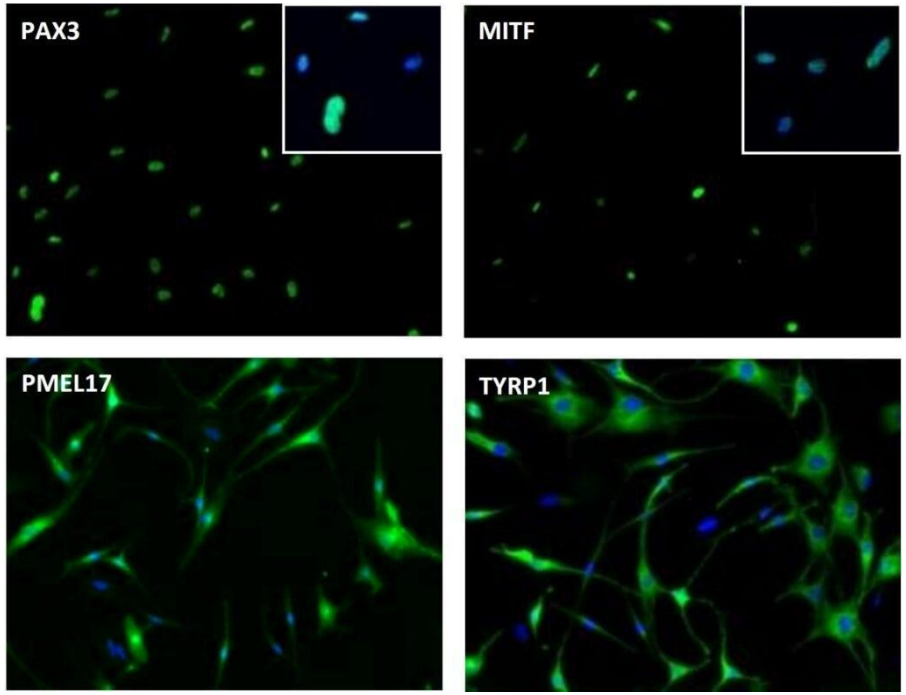
Phenotypic relevance: flow cytometry

PCi-MEL (red) and hiPSC (black) were cultured for 5 days, singled and stained with a PMEL17 antibody and analyzed by flow cytometry for PMEL17 protein expression. > 95% PMEL17+



Immunocytochemistry (ICC)

Immunostaining of PAX3, MITF, PMEL17 and TYRP1 (green) in PCi-MEL cultured for 5 days. Nuclei were counterstained with Hoechst (blue). X20 objective

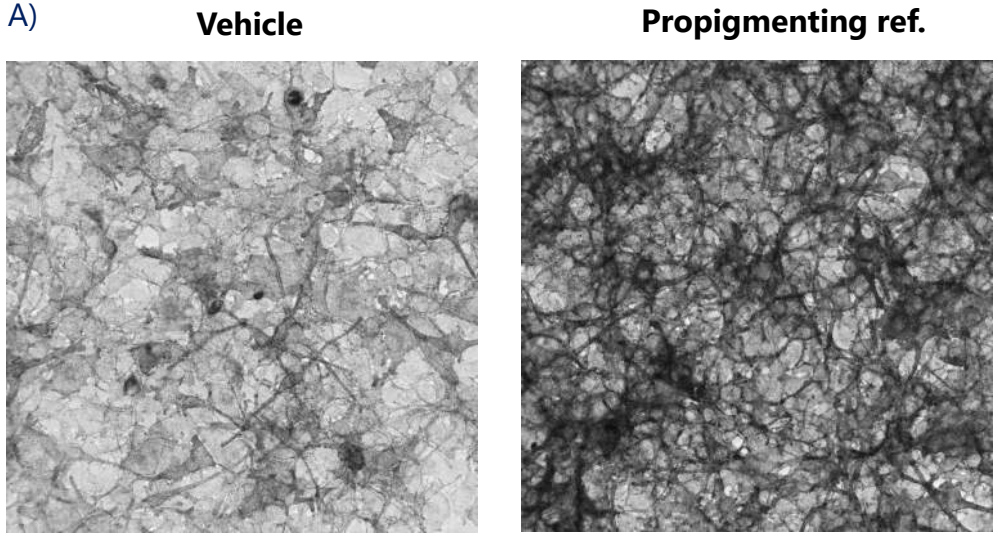


Modeling Pigmentation changes with human iPSC-derived melanocytes

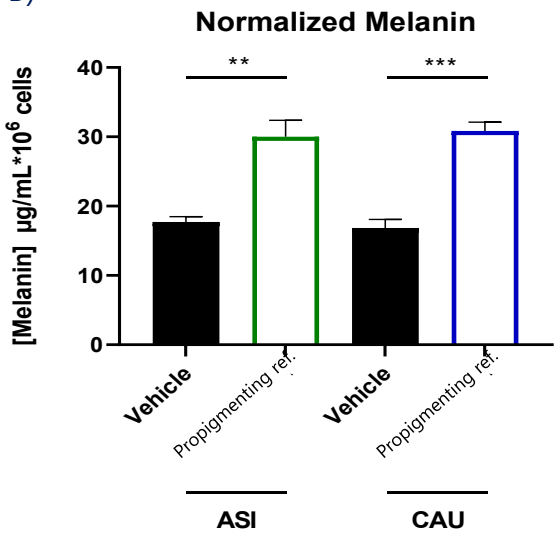
PCi-MEL are a relevant model for tanning bioassays

Caucasian PCi-MEL were cultured for 5 days and treated for 4 days with a propigmenting reference or vehicle. Representative brightfield images. X20 objective (A). Melanin content of Asian and Caucasian PCi-MEL was extracted, dosed and normalized to cell count after treatment for 4 days with a propigmenting reference or vehicle (B). African PCi-MEL were cultured for 5 days and treated for 4 days with a depigmenting reference, a propigmenting reference or vehicle and melanin content was extracted, dosed and normalized to cell count (C). Error bars represent Standard Deviation. Unpaired t test compared to the basal control with *p<0.05 **p<0.01 ***p<0.001 ****p<0.0001.

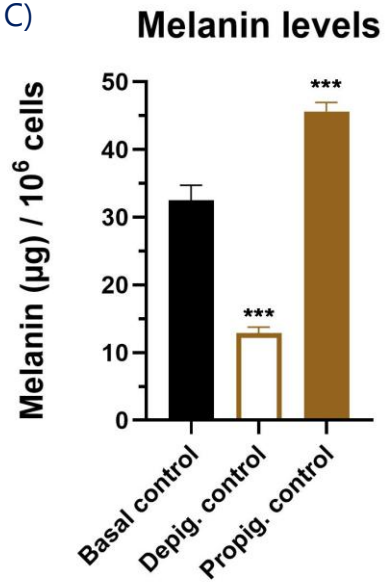
A)



B)



C)



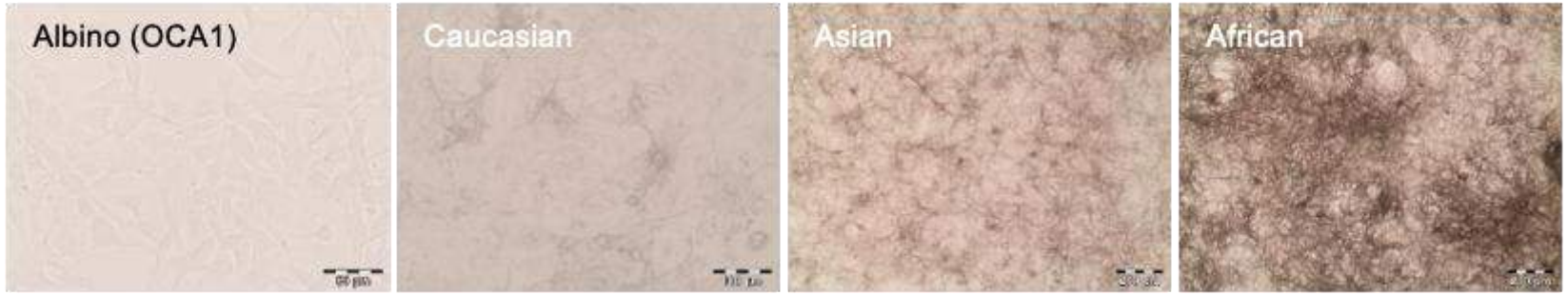
Modeling Pigmentation changes with human iPSC-derived melanocytes

Human iPSC-derived melanocytes are a relevant model for lightening bioassays

PCi-MEL with different phototypes were cultured for 5 days. Representative brightfield images. X20 objective .Scale bar 50 µm (A). Melanin content of Albino (ALB), Caucasian (CAU), Asian (ASI) and African (AFR) PCi-MEL was extracted, dosed and normalized to cell count (B). Albino (ALB), primary melanocytes (HEMn), Asian (ASI) and African (AFR) PCi-MEL were cultured for 5 days and treated for 4 days with a depigmenting reference or vehicle and melanin content was extracted, dosed and normalized to cell count (C). Error bars represent Standard Deviation. Unpaired t test compared to the vehicle control with *p<0.05 ****p<0.0001.

Levels of pigmentation related to ethnicity

A)



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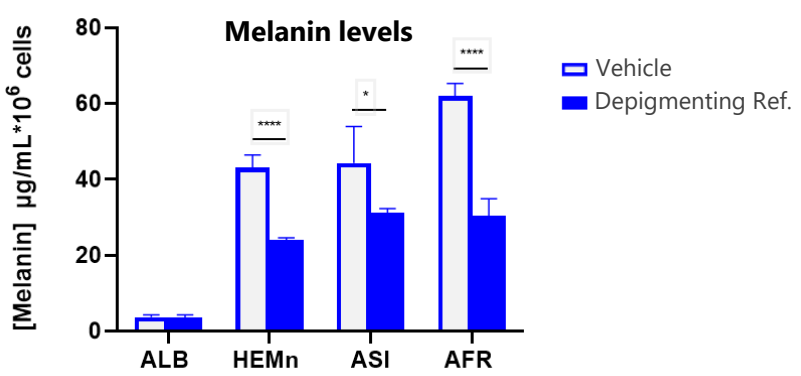

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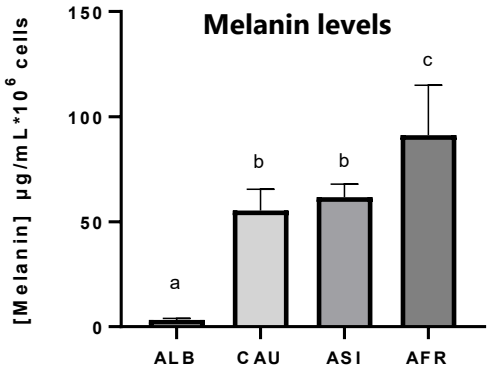


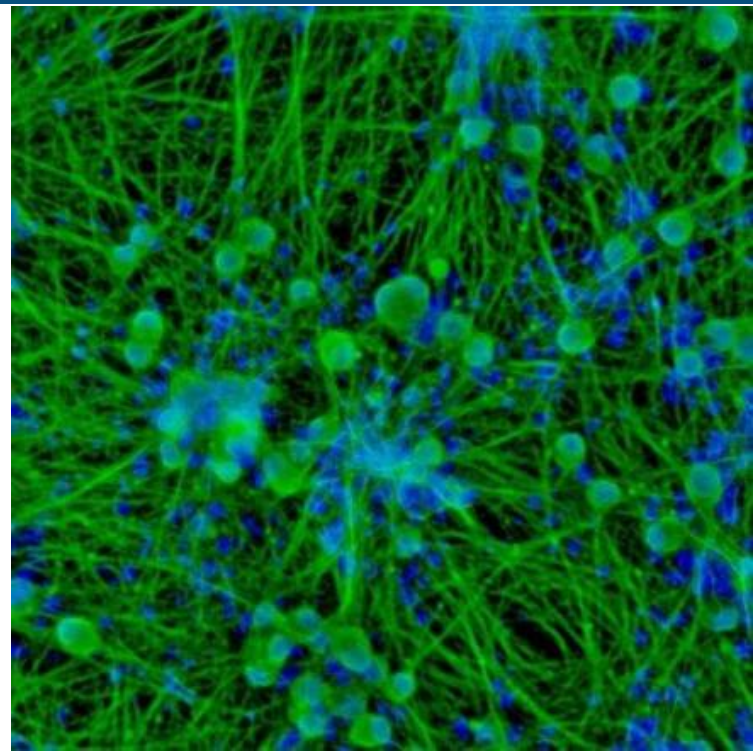
ALB: iPSC-albinos melanocytes
HEMn: primary melanocytes
ASI: iPSC-asian melanocytes
AFR: iPSC-african melanocytes

axoCells iPSC-derived sensory neurons

iPSC-derived sensory neuron progenitors are available in large batch sizes for reliable and consistent results for high-throughput screening assays. The cells are also suitable for investigating disorders of the peripheral nervous system.

Key highlights include:

- Assay-ready in 21 days
- Expression of the key nociceptive ion channels
- Functional relevance across multiple assays
- Designed for advanced in vitro model formats including co-culture, microfluidics devices and organ-on-chip platforms
- Manufactured in our ISO 9001-accredited production facility with excellent ISSCR Standards compliance



Fuel your *in vitro* models with our human iPSC-derived sensory neurons. For a quote or to order, operations@axolbio.com

- You'll need a Sensory Neuron Kit ax0157
- In this you'll find Sensory Neuron Cells ax0055 (1M) and reagents
- Follow the protocol
- 21 days later you will have high functioning sensory neurons

Donor gender	Donor age	Source	Donor	Product code	Cells/ vial
Male	Newborn	Cord blood	Healthy	ax0555	3.2 million / 96 well plate quantity
Male	Newborn	Cord blood	Healthy	ax0055	1 million / approx. 1/3rd 96 WP quantity

Dermatology services delivery and scientific team

Collaboration is at the heart of everything we do, ensuring that we bring the best minds together to drive meaningful progress in supporting the industry with physiologically relevant models for dermatology. Whether you're seeking advice, services, or support, our team is here ready to help you.

Our team is a dedicated group of experts that range across our sites, in Newcastle, Cambridge, and Roslin. With a deep commitment to advancing testing in dermo-cosmetics, we leverage the diverse expertise and innovative approaches across these sites. Collectively, they have over several years of experience in the field.

When you collaborate with Axol, you gain access to a tailored approach that supports your research every step of the way. From the start, we facilitate open communication with our iPSC experts, ensuring that your project is guided by decades of experience. We offer flexibility in experimental design, leveraging our in-house expertise to customize assays to meet your specific needs. Throughout the project, we maintain rigorous data management and ensure full transparency with detailed reporting and data-sharing meetings. Our commitment doesn't end at project completion, we continue to offer ongoing support, helping you integrate cells into your systems and maintain an open channel for future collaborations.

The future of dermatology

The future of dermatology and ingredient testing is poised for significant transformation, driven by technological advancements, personalized medicine, and a growing demand for transparency and safety in skincare products. As our understanding of skin biology deepens and new tools become available, both clinical dermatology and cosmetic science are entering an era of unprecedented precision and innovation.

- 3D skin models go beyond traditional 2D cultures, mimicking the architecture and function of real human skin. These systems provide a more realistic environment for evaluating how ingredients affect skin layers, barrier function, and inflammation—without the need for animal testing.
- Co-culture models that combine skin cells with sensory neurons open new possibilities for neurocosmetics, which target the skin–brain connection. These models help scientists study how ingredients interact with skin nerves, influencing sensations like tingling, itching, or soothing. They also support the development of products that modulate mood or stress via the skin.
- Together, these technologies mark a major step forward in ethical, accurate, and innovative ingredient testing, bringing dermatology closer to personalized and neurosensory-aware skincare solutions.

Specialist services and custom differentiation

With over a decade of ‘hands-on’ experience, Axol Bioscience offers outsourced scientific services to support biotechs and pharma. From assay development, model building and characterization to compound testing and profiling, we are here to help. We work true to our values of transparency and collaboration.

We provide a range of technical iPSC-related services including reprogramming, advanced gene-editing, stem cell differentiation, banking and expansion.

We have expertise in cellular profiling and compound testing with access to flow cytometry, ‘omics, real-time imaging assays, plate base assays, multi-electrode array.

Recognized as experts in the field of iPSC-differentiation, Axol is the lead in cellular manufacturing from iPSCs.

Our lines, your lines, third-party lines, we can manufacture a wide range of cell types building in QC throughout the process. Our manufacturing is scalable and customizable. We work closely with clients to ensure quality and consistency of supply.

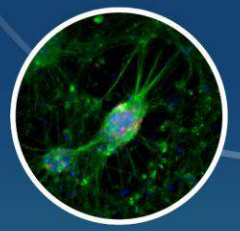
We can ship to the client or a third-party provider (CRO) or use the cells within Axol service projects.

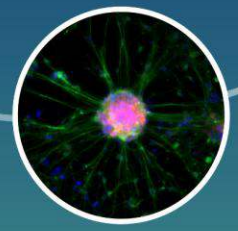
Contact operations@axolbio.com

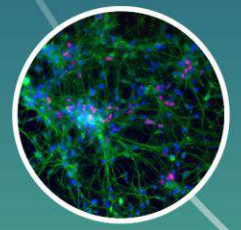
AXOL

If you would like to discuss the adoption of iPSC-derived cells or organoids into your workflow, or our specialist services provision, please contact us.

operations@axolbio.com
Axol Bioscience Ltd
www.axolbio.com







LRQA CERTIFIED ISO 9001 UKAS MANAGEMENT SYSTEMS 9001

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