| Title | Author | Year | Journal | Population | Sample_size | Cell_collection | Cell_line | Culture_medium | ALI_medium | Antibiotics_medium | Penicillin_concentration | Streptomycin_concentration | Gentamicin_concentration | Vancomycin_concentration | Tiacolin_concentration | Colomycin_concentration | Ciprofloxacin_concentration | Enzyme_digestion | Time_digestion | Temperature_digestion | Differentiation_method | Goblet_stain | Ciliated_stain | Tight_junction | Complete_mucosa | Mucosa_purpose | TEER_evaluation | Cell_viability | Supplemental_findings |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isolation, cultivation, and application of primary respiratory epithelial cells obtained by nasal brushing, polyp samples, or lung explants | Golec et al | 2022 | STAR Protocols | 4 | -999 | 6 | 2 | 0 | 0 | 9 | 100 | -999 | -999 | -999 | 0,01 | 0,016 | 0,003 | 2 | 12 | 4 | 0 | -999 | -999 | -999 | 0 | 3 | 1 | 0 | |
| A toolbox for studying respiratory viral infections using air-liquid interface cultures of human airway epithelial cells | Michi et al | 2021 | American Journal of Physiology | 3 | -777 | 4 | 2 | 1 | 1 | 7 | 100 | -777 | 0,05 | -888 | -888 | -888 | -888 | 2 | 40 | 4 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 4 | Strep concentration is 100 U/ml<br>Gentamycin was only added in the wash solution<br><br>Sample size not specified : They bought human lungs from a tissue retrieval service<br><br>Cells were immediately frozen after being digested ! Because cells hate serial passing. So you recieve cells, digest them, freeze them, thaw and culture under ALI<br><br>Immunohistochemistry ++++ to assess cell structure and morphology<br><br>Cell viability evaluation<br>- Lactate dehydrogenase : Measures LDH release from necrotic cells<br>- Lice cell propidium iodide : Evaluates necrotic cells |
| The mystery behind the nostrils – technical clues for successful nasal epithelial cell cultivation | Aydin et al | 2021 | Annals of Anatomy | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Isolation, expansion, differentiation, and histological processing of human nasal epithelial cells | Manna et al | 2021 | STAR Protocols | 1 | 1 | 2 | 1 | 1 | 1 | 7 | 100 | 0,1 | -888 | -888 | -888 | -888 | -888 | 0 | -888 | -888 | 0 | 1 | 2 | 0 | 0 | S | 0 | 0 | Also evaluated p53 by immunofluorescence |
| Preliminary Study on the Development of In Vitro Human Respiratory Epithelium Using Collagen Type I Scaffold as a Potential Model for Future Tracheal Tissue Engineering | Loksanathan et al | 2021 | Applied sciences | 4 | -999 | 1 | 1 | -777 | -777 | -999 | -888 | -888 | -888 | -888 | -888 | -888 | -888 | 1 | 1 | 37 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | Digestion with collagenase, 1<br>Medium: Mixed of DKSFM, F12 and DMEME ratio 2: 1: 1<br><br>Identified in their previous paper nasal cells using : MUC5B, Cytokeratin 14 & 18<br><br>Key notes on developping a function 3D model<br>- A good basal lamina for cell interaction : Collagen in this paper<br>- Mesenchymal/ fibroblasts<br>- ALI culture for mucociliary differentiation<br><br>Many studies support the usage of Retinoic acid as an aid to mucociliary differentiation |
| Ciliated Epithelial Cell Differentiation at Air-Liquid Interface Using Commercially Available Culture Media | Lee et al | 2020 | Methods in molecular biology | 4 | -999 | 2 | 1 | 0 | 3 | 7 | 100 | 0,1 | -888 | -888 | -888 | -888 | -888 | 0 | -888 | -888 | 0 | 1 | 1 | 0 | 0 | S | 1 | 0 | Co-culture of cells : DMEM + 3T3-J2 (Mouse fibroblasts)<br>Used LHC-9 media (LHC-8 + Retinoic acid + epinephrine)<br><br>Ciliary beat frequency (Hertz) after 28 days in ALI<br><br>Cells survive better in Pneuma-Cult however cilia beating frequency was lower and a higher content in mucus was observed<br><br>No TEER difference was observed |
| Structural and functional variations in human bronchial epithelial cells cultured in air liquid interface using different growth media | Leung et al | 2020 | Journal of Physiology at University of Massussets | 3 | 6 | 4 | 2 | 2 | 6 | -999 | -999 | -999 | -999 | -999 | -999 | -999 | -999 | 6 | 16 | 16 | 2 | 1 | 0 | 3 | 0 | 4 | 1 | 0 | Objective : Compare histologically nasal cells cultured in ALI Pneuma-cult vs ALI BEGM<br><br>Cell digestion : Protease was first used to digest human airways. Afterwards, Pronase and DNase was used to separate epithlium from trachea and bronchi<br>Globlet stain: MUC5AC and MUC2 and MUC5B immunohistos and also expression level via westerne blot<br>Cilia evaluated by ciliary beat and western blot expression level of cilia basal-body protein<br><br>results: Pneumocult -> more ciliated cells and Periodic acid shift (PAS)-positived cells, epithelial thickness tales, increased expression of protein MUC5AC and cilia basal-body protein<br><br>Important that media is supplement with reinoic acid to ensure differentiation of cells<br><br>Poorly differentiated structures are associated with higher TEER... So Pneuma-Cult cultures had lower TEER than BEGM. So well-differentiated cells have lower TEER because of the presence of numerous active ion channels<br><br>Conclusion : Pneumacult is better overall |
| Physical and immunological barrier of human primary nasal epithelial cells from non-allergic and allergic donors | Bergougnan et al | 2020 | World Allergy Organization | 4 | -999 | 5 | 1 | 3 | 0 | 8 | -999 | -999 | -999 | -888 | -888 | -888 | -888 | 0 | -888 | -888 | 0 | 1 | 2 | 1 | 0 | 4 | 1 | 3 | No digestion, sample was just put into trygpin and passaged<br>For ALI, used a mix 1:1 of DMEM and Airway Epithelial Cell Growth medium (Promocell)<br><br>Evaluation of rt-PRC and flow cytometry allergic vs healthy response to stimulation.<br><br>Healthy cells had a rapid growth compared to allergic donors. Also, there was a higher number of viable cells in the healthy population but no difference in the amount od dead cells<br><br>They also used Occludin and E-Cadherin as markers for tight junctions |
| Different Culture Conditions Affect Drug Transporter Gene Expression, Ultrastructure, and Permeability of Primary Human Nasal Epithelial Cells | Kreft et al | 2020 | Pharmaceutical Research | 4 | -999 | -777 | 1 | -777 | -777 | -999 | -999 | -999 | -999 | -999 | -999 | -999 | -999 | -888 | -888 | -888 | 0 | 0 | 0 | -777 | 0 | 2 | 1 | 3 | Cells were bought from Epithelix Sarl<br>Comparaison of 2 ALI medium and liquid-liquid culture<br>- Epithelix culture medium<br>- PromoCell Airway Epithelial Cell growth medium<br>- Advanced Minimum Essential Medium (A-MEM)<br><br>Tight junctions were evaluated by : Protein occludin, E-cadherin and Cytokeratin-7<br><br>Cells grown in PromoCell had pleimorphic but numerous microvilli compared to the others<br>Cells culture in Promocell and epithelix resulted in enlarged cells and presence of vacuole -> autoconsolvin/autophagic engine<br>On average ALI -> higher TEER than submerged culture |
| Utilization of Air–Liquid Interface Cultures as an In Vitro Model to Assess Primary Airway Epithelial Cell Responses to the Type 2 Cytokine Interleukin-13 | Everman et al | 2018 | Methods in molecular biology | 4 | -999 | -999 | 3 | 3 | 1 | 2 | -999 | 10 | -888 | -888 | -888 | -888 | -888 | -999 | -999 | -999 | 0 | -999 | -999 | -999 | 0 | 4 | 0 | 3 | Penicillin concentration 10 000 IU |
| Air–Liquid Interface Culture of Human and Mouse Airway Epithelial Cells | Jiang et al | 2018 | Methods in molecular biology | 4 | -999 | 4 | 2 | 2 | 2 | 7 | -999 | -999 | -888 | -888 | -888 | -888 | -888 | 4 | 12 | 4 | 0 | -999 | -999 | -999 | 0 | S | 0 | 0 | |
| Non-woven bilayered biodegradable chitosan-gelatin-polylactide scaffold for bioengineering of tracheal epithelium | Romanova et al | 2018 | Cell Proliferation-Willey Journal | 4 | -777 | 4 | 2 | | | 8 | 100 | 1 | 0,05 | -888 | -888 | -888 | -888 | 4 | | | 0 | | | | | 2 | | | Objective : Culture a biodegradable non-woven material in order to obtain a well-differentiated human airway epithelium<br><br>Sample size was not specified |
| In vitro Methods for the Development and Analysis of Human Primary Airway Epithelia | Gianotti et al | 2018 | Frontiers in Pharmacology | 4 | -777 | 8 | 1 | 0 | 0 | 7 | 100 | 0,1 | -888 | -888 | -888 | -888 | -888 | 4 | 12 | 4 | 0 | 1 | 1 | 1 | 0 | 3 | 1 | 0 | Good article for antibiotics for CF epithelia<br>Sample size not specified<br>Good TEER values -> 5 omhs for non CF epithelia<br><br>Transport ions was measured using an ussing chamber<br><br>Cells are cultured in a proliferative medium until fourth passage. (Mix of 1:1 LHC basal medium and RPMI)<br>Whe using a serum free medium they obtained more ciliated and mucus cells<br><br>Rapidly beating cilia meant good cell viability |
| Characterizing well-differentiated culture of primary human nasal epithelial cells for use in wound healing assays | Schagen et al | 2018 | Laboratory investigation | 1 | 18 | 2 | 1 | 2 | 4 | -999 | -999 | -999 | -999 | -999 | -999 | -999 | -999 | -888 | -888 | -888 | 0 | 1 | 2 | 1 | 0 | 4 | 1 | 0 | Seed cells at 25 000 cells per insert (Plaque 6 puits)<br><br>Cells were kept in ALI for 7 weeks and TEER was measured at 3, 5 & 7 weeks<br><br>Only 3weeks to observe full differentiation |
| Characterization of pediatric cystic fibrosis airway epithelial cell cultures at the air-liquid interface obtained by non-invasive nasal cytology brush sampling | Schogler et al | 2017 | Respiratory Research | 0 | 7 | 2 | 1 | 2 | 1 | -777 | -888 | -888 | -888 | -888 | -888 | -888 | -888 | -888 | -888 | -888 | 0 | 1 | 1 | 1 | 0 | 3 | 1 | 0 | Basal cells was stained using PG1<br>Cell layer integrity tested with Fluorescein<br>isothiocyanate-dextran mixed with pneumocult added apically and incubated 4h, they evaluated the basal fluorescence after |
| In Vitro Modeling of RSV Infection and Cytopathogenesis in Well-Differentiated Human Primary Airway Epithelial Cells (WD-PAECs) | Broadbent et al | 2016 | Methods in molecular biology | 0 | -999 | 0 | 2 | 0 | 0 | 7 | 100 | 0,1 | -888 | -888 | -888 | -888 | -888 | -999 | -999 | -999 | 2 | 1 | 1 | 1 | 0 | 0 | 1 | 3 | TEER result value should be > 300 ohms / cm2<br><br>If liquid on apical surface of ALI cells = evidence of mucus production. Aspirate to ensure viability of ALI culture |
| Rapid expansion of human epithelial stem cells suitable for airway tissue engineering | Butler et al | 2016 | American Journal of Respiratory and critical care Medicine | 4 | -999 | 4 | 1 | 3 | 2 | 8 | 100 | 0,1 | 0,01 | -888 | -888 | -888 | -888 | -999 | -999 | -999 | 0 | 1 | 2 | 0 | 1 | 2 | 1 | 0 | Objective : Design a scalable cell culture system to culture respiratory cells for in vivo grafts<br><br>Use inactivated mouse embryonic fibroblast feeder cells and ROCK inhibition to immortalized epithelial cells and increase proliferation<br><br>Explants cultured in BEGM, co-culture in DMEM, Pen-Stre used GIBCO1570<br><br>Cells grown in combination with 3T3-J2 feeder cells and Y-27632 led to formation of colonies of small epithelial cells whose morphology did not change with passage. Which was not the case with BEGM<br><br>Cells grown in 3T3-Y maintained ciliated differentiation after multiple passage which BEGM did not<br><br>Also, evaluate formation of tracheosphere BEGM vs 3T3-J2 feeder cells and Y-27632<br><br>3 important criteria for and ideal epithelial expansion system<br>- Autologous tissue = no adverse immune response<br>- Ability to expand<br>- High in quality in terms of karyotype and phenotype<br><br>They obtained a complete a complete mucosa but it was a Xenograft (Mix of human nasal cells and mouse fibroblast) grown afterwards on a decellularized scaffold |
| A Rotating Bioreactor for Scalable Culture and Differentiation of Respiratory Epithelium | Brickman Raredon et al | 2015 | Cell Medicine | 1 | -888 | -777 | 2 | 6 | 4 | 7 | -999 | -999 | -888 | -888 | -888 | -888 | -888 | -888 | -888 | -888 | 0 | 1 | 1 | 1 | 0 | S | 0 | 0 | Objective : Culturing cells using a rotating bioreactor model<br><br>Cell line : They bought hNBE cells from Lonza (CC-2540s)<br><br>Utilize anti-pan-cytokeratin (sc-81018)<br><br>Advantages of rotating models vs ALI<br>- Medium changes itself continuously so need to worry about it<br><br>Results: no difference in cell viability, but more tight junction, more MUC5AC and cilated cells in rotating ALI |
| A Rotating Bioreactor for Scalable Culture and Differentiation of Respiratory Epithelium | Brickman Raredon et al | 2015 | Cell Medicine | 1 | -888 | -777 | 2 | 6 | 4 | 7 | -999 | -999 | -888 | -888 | -888 | -888 | -888 | -888 | -888 | -888 | 0 | 1 | 1 | 1 | 0 | S | 0 | 0 | Objective : Culturing cells using a rotating bioreactor model<br><br>Cell line : They bought hNBE cells from Lonza (CC-2540s)<br><br>Utilize anti-pan-cytokeratin (sc-81018)<br><br>Advantages of rotating models vs ALI<br>- Medium changes itself continuously so need to worry about it<br><br>Results: no difference in cell viability, but more tight junction, more MUC5AC and cilated cells in rotating ALI |
| Isolation and culture of primary human nasal epithelial cells from anesthetized nasal epithelia | Hussain et al | 2014 | Acta oto-laryngologica | 1 | 11 | 2 | 1 | 5 | -888 | 7 | -777 | -777 | -888 | -888 | -888 | -888 | -888 | 0 | -888 | -888 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | Objective : Examine the effect of local anesthesia in patient undergoing nasal brushing to collect cells<br><br>Utilisese Cytokeratin-18 (CK-18) to stain for epithelial cells<br><br>Penicillin and streptomycin concentration : 1% |
| Human Nasal and Tracheo-Bronchial Respiratory Epithelial Cell Culture | Fulcher et al | 2013 | Methods in molecular biology | 4 | -999 | 4 | 2 | 2 | 0 | 8 | 100 | 0,1 | 0,05 | -888 | -888 | -888 | -888 | 5 | 24 | 4 | 0 | -999 | -999 | -999 | 0 | S | 0 | 0 | Penicillin concentration 100 U/ml |
| Culturing of Human Nasal Epithelial Cells at the Air-Liquid Interface | Muller et al | 2013 | Journal of Visualized Experiments | 4 | -999 | 1 | 1 | 2 | 1 | -999 | -888 | -888 | -888 | -888 | -888 | -888 | -888 | 3 | 0,3 | -777 | 0 | 0 | 0 | 0 | 0 | S | 0 | 0 | Digestion temperature : Room temperature<br>Taux de succès d'environ 80% pour ce protocol |
| Comparison of human nasal epithelial cells grown as explant outgrowth cultures or dissociated tissue cultures in vitro | Jiao et al | 2013 | Higher Education | | | 1 | 1 | 0 | | 7 | 100 | 0,1 | -888 | -888 | -888 | -888 | -888 | 4 | 12 | 4 | | | 1 | 1 | 0 | 4 | | | Patients included -> chronic rhinosinusite |

| Title | Author | Year | Journal | Population | Sample_size | Cell_collection | Cell_line | Culture_medium | ALI_medium | Antibiotics_medium | Penicillin_concentration | Streptomycin_concentration | Gentamicin_concentration | Vancomycin_concentration | Tazocilin_concentration | Colomycin_concentration | Ciprofloxacin_concentration | Enzyme_digestion | Time_digestion | Temperature_digestion | Differentiation_method | Goblet_stain | Ciliated_stain | Tight_junction | Complete_mucosa | Mucous_purpose | TEER_evaluation | Cell_viability | Supplemental_findings |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| The use of nasal epithelial stem/progenitor cells to produce functioning ciliated cells in vitro | Zhao et al | 2012 | American Journal of Rhinology and Allergy | 1 | 3 | 1 | 1 | 0 | 4 | 7 | 100 | 0,025 | -888 | -888 | -888 | -888 | -888 | 4 | 12 | 4 | 2 | 1 | 1 | 0 | 0 | 4 | 0 | 0 | Antibiotics: with 100 U/mL of Antibiotic-Antimycotic solution (Gibco-Invitrogen, Grand Island, NY)<br><br>Digestion : Overnight = 12 hours<br><br>Epithelial cell marker stain : P63 and KI-67 : Proliferation marker stain |
| An air-liquid interface culture system for small airway epithelial cells | Damian et al | 2011 | -888 | 3 | 5 | 4 | 0 | 6 | 4 | -999 | -999 | -999 | -999 | -999 | -999 | -999 | -999 | -999 | -999 | -999 | 0 | -777 | 1 | 1 | 0 | 5 | 1 | 0 | Mucus cells: evaluated mucus production via blue Alcian stain<br>Ck-18 : specific epithelial marker<br><br>FITC was equally used for cilia |
| Tissue-Specific Stem Cell Differentiation in an in vitro Airway Modela | Prytherch et al | 2011 | Macromolecular Biosciences | 3 | -999 | -777 | 2 | 2 | 0 | 7 | 10 000 | 10 | -888 | -888 | -888 | -888 | -888 | -888 | -888 | -888 | 0 | 2 | 0 | 1 | 0 | 5 | 1 | 0 | NHBE Cells purchased from Lonza<br>Evaluated also Clara cells via CC10 and basal epithelial cells via p63<br><br>Penicillin concentration : 10 000 U/ml<br><br>Utilize scanning electronic microscopy to visualise cells<br><br>Clara cells are secretory non ciliated cells<br><br>Interesting results ! They were able to identify : Clara cells, non ciliated cells, non mucus secretory epithelial cells |
| Primary Epithelial Cell Models for Cystic Fibrosis Research | Randell et al | 2011 | Methods in molecular biology | 4 | -999 | -888 | 1 | 2 | 2 | 8 | 100 | 0,1 | 0,05 | -888 | -888 | -888 | -888 | 4 | 24 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | ALI culture medium : 50 50 mixture of BEGM and DMEM<br><br>Protocols for creation of viral vectors, airway epithelial cells lines, report gene assay in ALI, protein expression or knock down |
| Air–Liquid Interface Culture of Nasal Epithelial Cells on Denuded Amniotic Membranes | Even-Tzur et al | 2010 | Cellular and Bioengineering | 4 | -999 | 1 | 1 | 2 | -999 | -999 | -999 | -999 | -999 | -999 | -999 | -999 | -999 | 2 | -999 | -999 | 0 | 1 | 1 | 0 | 5 | 0 | 0 | Objective : To describe a way of culturing nasal epithelial cells on the denuded amniotic membrane as it can serve as an adequate replacement for collagen<br><br>Scaffold = Placenta tissue<br><br>Rationale explaining that is placental membrane contains as much collagen as that of the basal membrane of the nose. Therefore, there is no need to buy a scaffold that has to supplemented with extra collagen nutrients<br><br>AM cultured in MEM supplemented with penicillin 100 U/ml, streptomycin 0,1 mg/ml and gentamycin 0,06 mg/ml.<br><br>Use ELISA for quantification of mucin secretion<br>Results :<br>- Denser cilia and bigger cells on AM scaffold than synthetic<br>- Muc5 secretion was constant after 14 days<br>- Actin microfilament of cytoskeleton are implicated in the secretion of mucin<br>- Cells adhesion is better on AM than synthetic. Evaluated via airflow stress mesure by wall shear stresses |
| Human Nasal Turbinates as a Viable Source of Respiratory Epithelial Cells Using Co-Culture System Versus Dispase Dissociation Technique | Norruddin et al | 2007 | Laryngoscope | 4 | 6 | 1 | 1 | 0 | -888 | -999 | -888 | -888 | -888 | -888 | -888 | -888 | -888 | -777 | -777 | -777 | 1 | 1 | 3 | 0 | 0 | 2 | 0 | 0 | Objective : Compare respiratory cells grown using co-culture systems vs dispase dissociation techniques... Collagenase vs Dispase<br><br>Comparaison of extraction with collagenase 1 (12h at 4) vs dispase (20-30h at 4)<br>Use a combination of DMEM and DKSFM<br>Cell types evaluated by PCR<br><br>MUC5A gene was also investigated<br><br>Dispase 2 = Protéase !<br><br>Results :<br>- MUC5A showed poor to zero expression in both cultures<br>- More basal cells in the collagenase culture<br><br>- CK-18 a marker for ciliated cell stain was absent and it makes sense because cells were not grown in ALI... So there was no environmental pressure to produce cilia to clear mucosal apical surface |
| Physiological 3D tissue model of the airway wall and mucosa | Choe et al | 2006 | Nature protocols | 4 | -888 | -777 | 0 | 2 | 2 | 7 | 10 000 | 10 | 0,05 | -888 | -888 | -888 | -888 | 0 | -888 | -888 | 0 | -999 | -999 | -999 | 0 | 5 | 0 | 0 | Cilia were observed after 3 weeks in ALI<br><br>Model is not designed for in vivo grafts or TEER evaluation<br><br>Use BEBM medium for expansion<br><br>It takes 7 days for ALI cells to differentiate and phenotype was maintained till up to 4 weeks !<br> |
| Expansion of cultures of human tracheal epithelium with maintenance of differentiated structure and function | Widdicombe et al | 2005 | BioTechniques | 3 | 3 | 4 | 2 | 0 | -888 | 8 | 100 | 0,1 | 0,05 | -888 | -888 | -888 | -888 | 4 | 12 | 4 | 1 | -999 | -999 | -999 | 0 | 5 | 1 | 0 | Objective : Develop a simple passagin technique<br>20 000 cellules par T25 & 500 000 cellules par T75<br><br>Loss of differentiation after 3 passages. So cells at P3, P4 are well-differentiated !<br>However, cilia developps faster when cells are at P0 and P1<br><br>Media supplemented with LHC-9 : Lechne's laboratory of human carcinogenesis basal medium 9<br><br>Digestion time : Overnight = 12 hours |
| Isolation and air–liquid interface culture of human large airway and bronchiolar epithelial cells | Bals et al | 2004 | Journal of Cystic Fibrosis | 4 | -777 | 4 | 2 | 0 | 0 | 11 | 50 | 0,05 | -888 | -888 | -888 | -888 | -888 | 4 | 24 | 4 | 0 | -999 | -999 | -999 | 0 | 3 | 1 | 0 | Antibiotics concentration<br>- Imipenem-Cilastin : 0,05 mg/ml<br>- Ceftazidine : 0,05 mg/ml<br><br>Sample size was not reported<br><br>TEER measurement should be followed using an ohmmeter |
| Production Of Tissue-Engineered Three-Dimensional Human Bronchial Models | Paquette et al | 2003 | In Vitro Cellular and Developmental Biology | 4 | -999 | 0 | 0 | 0 | 0 | 10 | 100 | -888 | 0,025 | -888 | -888 | -888 | -888 | 1 | -999 | -999 | 0 | 2 | 0 | 0 | 0 | 5 | 0 | 0 | Utilize cytokeratin-14 (CK-14) and epithelial keratin A-E3<br><br>Identification of mucoglycoproteins using periodic acid-shiff stain |
| Engineering a Composite Neotrachea With Surgical Adhesives | Doolin et al | 2002 | Journal of Pediatric Surgery | | | -777 | | 2 | | | | | | | | | | | | | | | | | | 2 | | | |
| Living epithelial-mesenchymal compounds formed in vitro suitable for autografting | Ross et al | 1997 | European Archives of Oto-Rhino-Laryngology | 4 | 8 | 2 | 1 | 0 | -888 | 7 | 100 | 0,1 | -888 | -888 | -888 | -888 | -888 | 2 | 16 | 4 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | Results: 87% success rate for culture<br>respiratory epithelial cultures cilia<br>disappeared within 2-3 weeks and initial beat frequency<br>was about one-third of normal. |
| Development of a Human Nasal Epithelial Cell Culture Model and its suitability for transport and metabolism studies under in vitro conditions | Werner et al | 1995 | Pharmaceutical Research | 4 | -777 | 1 | 1 | 0 | -888 | 7 | 100 | 0,1 | -888 | -888 | -888 | -888 | -888 | 4 | 20 | 4 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | Sample size not specified<br>Digestion time : 16 to 20 hours<br><br>Turbinates were preferred compared to tonsils because tonsils always had way more infections<br><br>Dome-formation caused by secretion of solutes and water through basolateral membrane werre an indication of tight junction formation<br><br>Tight junction were also evaluated using FITC-labeled phalloidin<br><br>Only 5% of their monolayer hd ciliated cells |
| Human Respiratory Mucosa in a Non-adhesive Stationary Organ culture System | Steinsvag et al | 1991 | Laryngoscope | 0 | 45 | 1 | 1 | 2 | -888 | 7 | 100 | 0,1 | -888 | -888 | -888 | -888 | -888 | -999 | -999 | -999 | 1 | 2 | 0 | 0 | 0 | 5 | 0 | -777 | Cells were purchased from clonetics corporation<br>Viability: cells considered viable when motile cilia were observed<br><br>They relied on microscopy for cell characteristics identification |
| A Serum-Free Method For Culturing Normal Human Bronchial Epithelial Cells At Clonal Density | Lechner et al | 1985 | Journal of Tissue Culture Methods | 3 | -999 | 4 | 0 | 4 | -888 | 2 | -888 | -888 | 0,05 | -888 | -888 | -888 | -888 | -999 | -999 | -999 | 1 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | Medium culture : Three different nutrient media are used, L15, CMRL 1066, and LHC basal. NO DMEM<br>No extraction, just put the explants in the petri |
| Polarized Cultures Of Human Airway Epithelium From Nasal Scrapings And Bronchial Brushings | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Regenerative Potential of Human Airway Stem Cells in Lung Epithelial Engineering | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |