

2023학년도 자유선택실습

가톨릭대학교 서울성모병원 류마티스 내과

2023년 1월 2일 ~ 2023년 1월 13일 (2주)

영남대학교 의과대학

본과 4학년 6번

금 하 림



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2. 기관 소개
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4. 실습 환경



사전 준비 과정

- 류마티스 내과
- 실습 일정 조율: 류마티스 내과 실습, 바이오 벤처 회사 견학
- 공부: 류마티스 내과학, 면역학

기관 소개

- **YiPSCELL**

- 유도만능줄기세포를 이용한 정상 및 질환 세포주 생산
- 질환모델링에 필요한 플랫폼 서비스 제공
- 줄기세포기반 치료제 개발

- **가톨릭대학교 서울성모병원 류마티스내과**

실습 내용

입셀 실습

1. 랩 미팅 참석 및 컨퍼런스 참석
2. 입셀 연구시설 견학

류마티스 내과 실습

3. 류마티스 내과 외래 참관
4. 류마티스 내과 회진 참관
5. 그 외 류마티스 내과 실습
6. 류마티스학 교과서 공부

가톨릭대학교 견학

7. 가톨릭대학교 연구시설 견학
8. 가톨릭대학교 의학도서관 견학



1. 랩 미팅 참석 및 세미나 참석

• 랩 미팅

• 세미나

- 테라젠 바이오
- 에피바이오텍
- Thermofisher

THERAGEN BIO.
홍창호 박사님

Stepwise Deviation of Human Embryonic Stem cells (hESCs) During Long-Term Maintenance
(Long term 배양 후정복합화, 변형 안정화) (biologic stability 평가)

ISSCR, July 11 2017) tumorigenesis 기전 (biology 시...) → 어떻게 타인 평가할 것인가?

* Stem cell risk : 면역반응, 감염, 바이러스에 의한 외 / genomic integrity, cell purity & 등.

* tumorigenicity 왜 생기나? 어떻게 확인하나? 어떻게 막아나?

ESQ blastocyst → ESC (culture adaptation) → reprogramming → differentiation

IPS 성체세포 → TPS → reprogramming → differentiation

Genomic instability (C)가 중요!
(rps QC guideline 있음)

* Variant → 배양 분자 → 분자 다양성 → 증식 억제

① 가장? 결과?
② somatic mutation 분석 - time-point postive?

• 200,000 passage까지 기록. → pluripotency는 3000-4000 (YH115, 1000-2000, 4000) 정도 유지. 분자 다양성. 2000-4000 정도 유지. 2000-4000 정도 유지.

Whole genome sequencing: copy number variation, somatic mutation

Transcriptome: cellular heterogeneity

Epigenetics: chromatin accessibility

How?

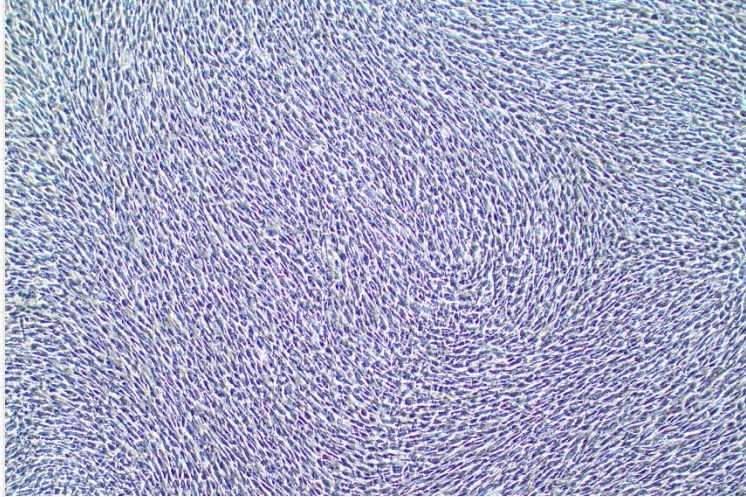
1) CNV: 200,000, 100,000, 100,000, 100,000 (gen) (gen) (gen) (gen)

2) somatic mutation: missense mut. 가 100,000, 100,000, 100,000, 100,000 (gen) (gen) (gen) (gen)

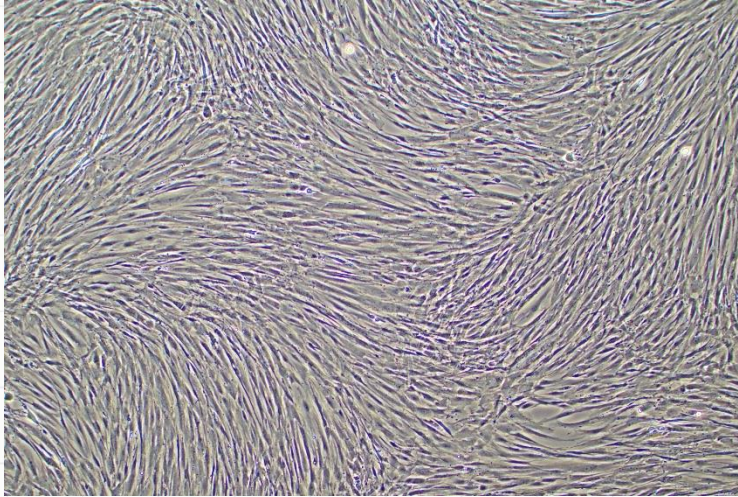
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2. 입셀 연구시설 견학

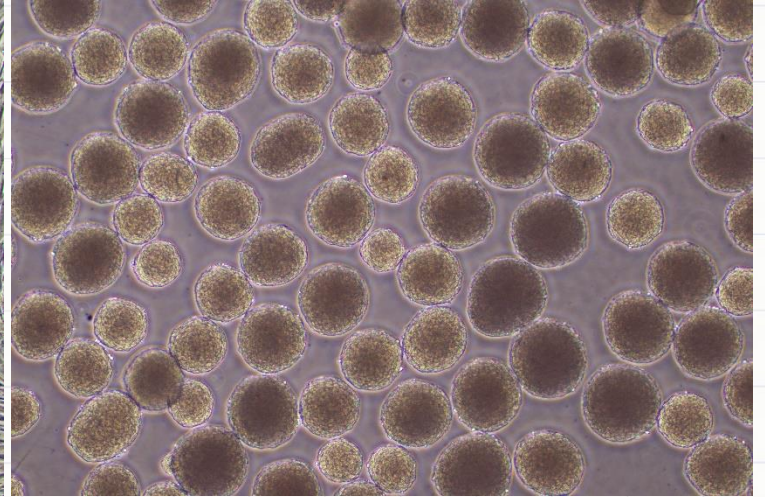
- iPS cell split
- NK cell harvest
- MIU Chon assay



iPS cell



MSC



MIU Chon

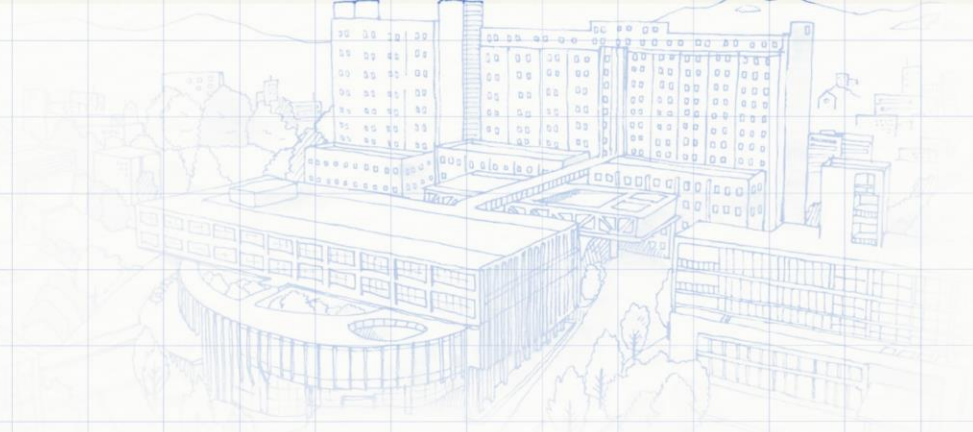
3. 류마티스 내과 외래 참관



- Ankylosing spondylitis
- Osteoarthritis
- SLE
- Rheumatoid arthritis
- Sjogren's syndrome

4. 류마티스 내과 회진 참관

- SLE
- Lupus nephritis
- CNS SLE
- Systemic sclerosis



5. 그 외 류마티스 내과 실습

- 관절 초음파 참관
 - 활액 분석
 - OA 초음파 소견
- OCS 활용
- 류마티스 티칭
 - Vasculitis
 - 심초음파

류마티스 내과 실습

영남대학교 본과 3학년 금하림

1. Rheumatoid arthritis 진단기준

4가지 Domain: 침범된 관절, 혈청 검사, 급성기반응물질, 증상 지속 기간

Domain		점수
침범된 관절	큰 관절* 1개	0
	큰 관절 2-10개	1
	작은 관절** 1-3개	2
	작은 관절 4-10개	3
	>10개 관절 (적어도 1개의 작은 관절 포함)	5
혈청 검사	류마티스인자 (-) and 항CCP항체 (-)	0
	류마티스인자 (양성성***) or 항CCP항체 (양성성)	2
	류마티스인자 (강양성) or 항CCP항체 (강양성)	3
급성기반응물질	정상 CRP and 정상/비정상 ESR	0
	비정상 CRP or ESR	1
증상 지속 기간	<6주	0
	≥6주	1

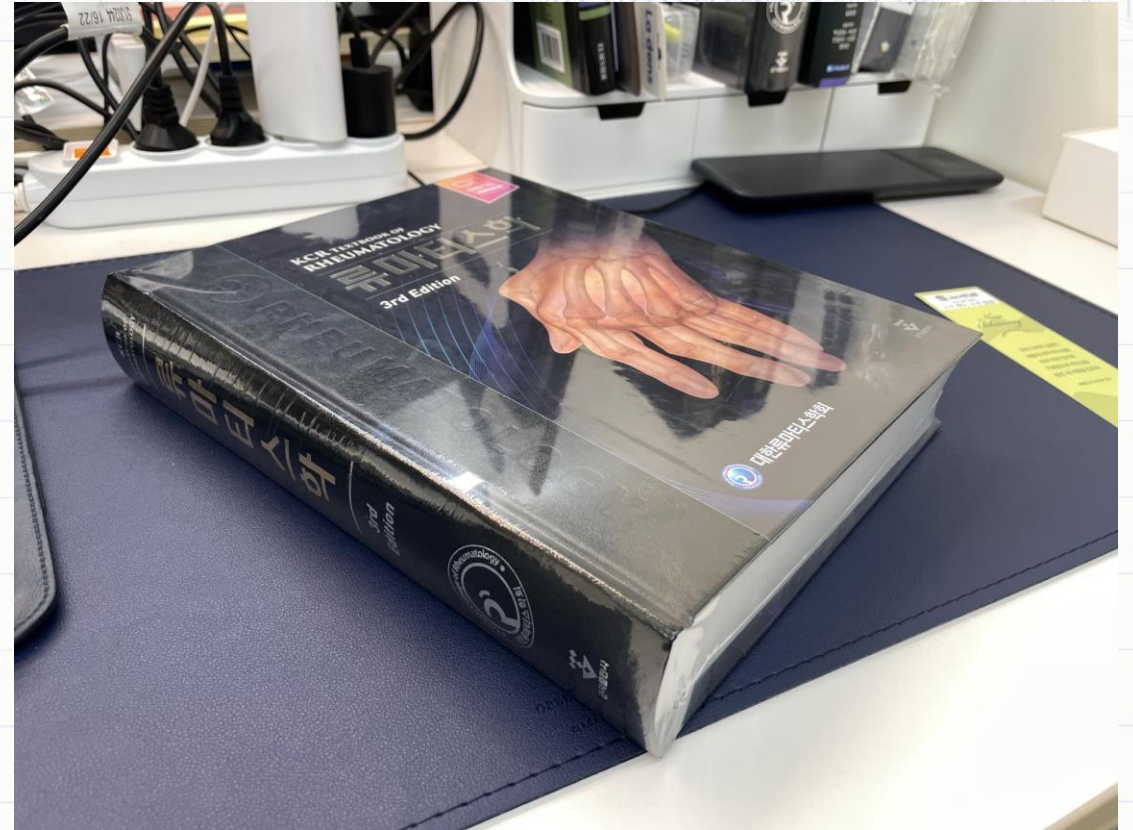
최소한 한 개 이상의 항양성이 있으면서 다른 질환이 배제되고 점수가 6점 이상일 때 진단.

2. Management order

1	Vital sign	BP, HR, RR, BT, (O ₂ saturation)
2	Diet	NPO(nothing per oral) 금식
		SOW(sips of water) 소량의 물
		LD(liquid diet) 미음, 유동식(물, 과일 주스, 차)
		SD(soft diet) 죽, 연식
		RD(regular diet) 일반식
		TD(tolerable diet) 허용가능한 식이. 환자가 원하는 일반식
	상급식	익히고 끓여서 섭취, 멸균 포장된 음식. 면역 저하로 인한 감염 예방. 생과일, 채소,
	LSD(low salt diet)	저염식. 가벼운 심부전, 부종, 혈압조절
	저지방식이	고지방식이 섭취 후의 복부팽만, 소화불량, 복통, 지방변, 영양소 손실 예방. 만성당뇨병 환자.

6. 류마티스학 교과서 공부

- 전신홍반루푸스
- 루푸스 신염
- 결정관절병증
- 골관절염
- 척추관절염
- 쇼그렌증후군
- 전신경화증
- 염증근염
- 섬유근육통
- 류마티스의 내과적/외과적 치료



7. 가톨릭대학교 연구시설 견학

- 가톨릭대학교 의생명산업연구원
 - 대형 연구 센터 / 사업단
 - 연구 중점 류마티스 내과

● 대형연구센터 · 사업단



과학기술정보통신부

MRC(기초의과학분야 선도연구센터)
빅데이터 기반 암진화연구센터



교육부

BK21 4단계 사업
미래의과학 인재양성 교육연구단



보건복지부

질환유효성평가지원센터
관절·면역질환 유효성평가지원센터



과학기술정보통신부

리더연구지원사업
창의시스템의학연구센터



보건복지부

재생의료 인프라 공용활용 지원사업
GMP기반 재생의료 임상연구 기반조성사업



과학기술정보통신부

바이오의료기술개발사업
환자 맞춤형 세포·면역치료
바이오 코어 퍼실리티 센터



과학기술정보통신부

바이오·의료기술개발사업
가톨릭기능성세포치료센터



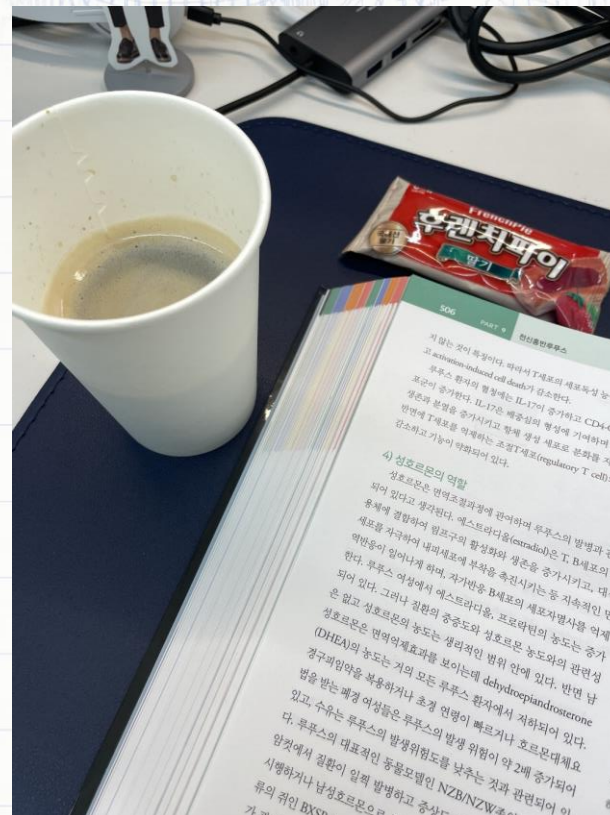
보건복지부

지역공동민간보조사업
서울금연지원센터



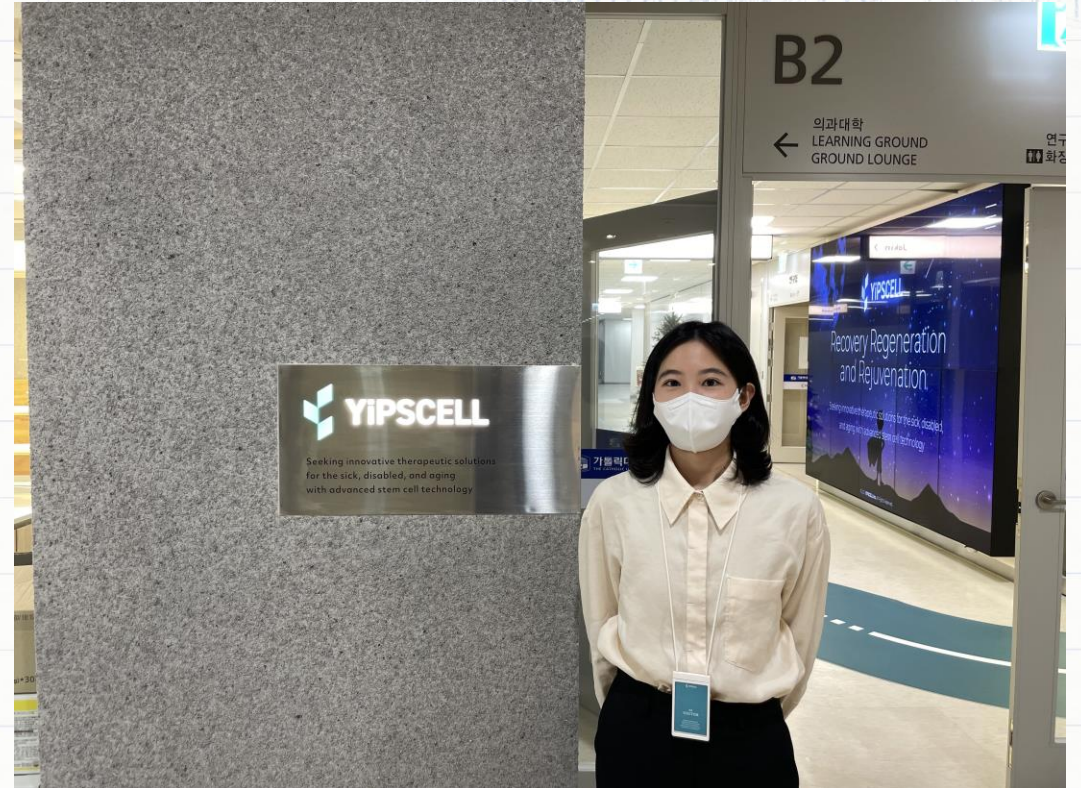
8. 가톨릭대학교 의학도서관 견학





소감

- 류마티스 내과
- 바이오 벤처회사
- 다른 대학병원



감사합니다

