# DOI, CrossRef, PMC and KoreaMed Synapse: Why? How?









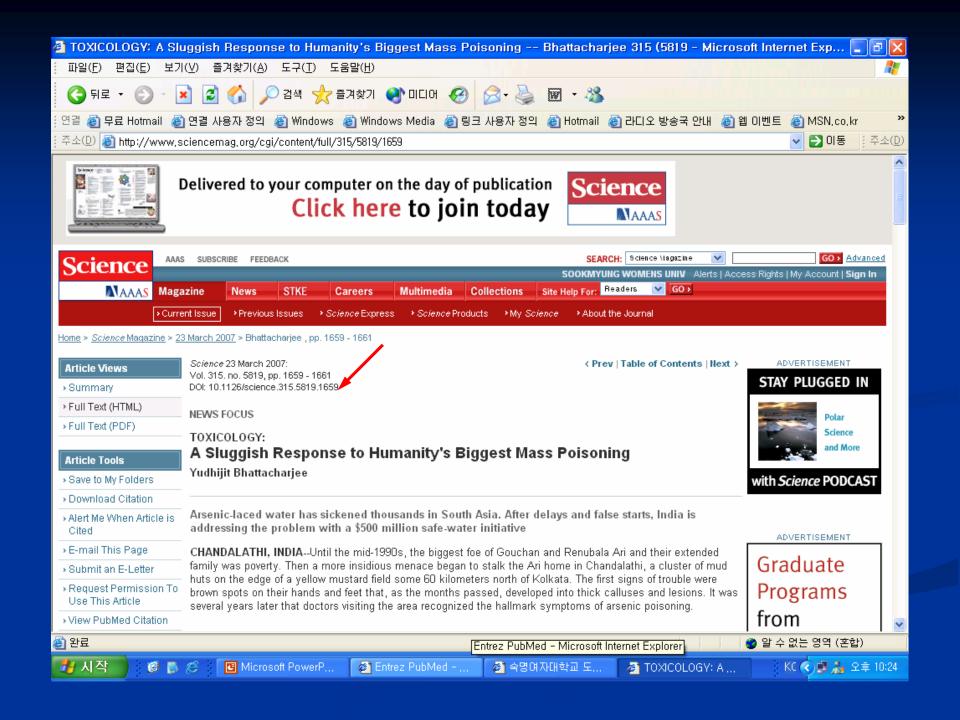


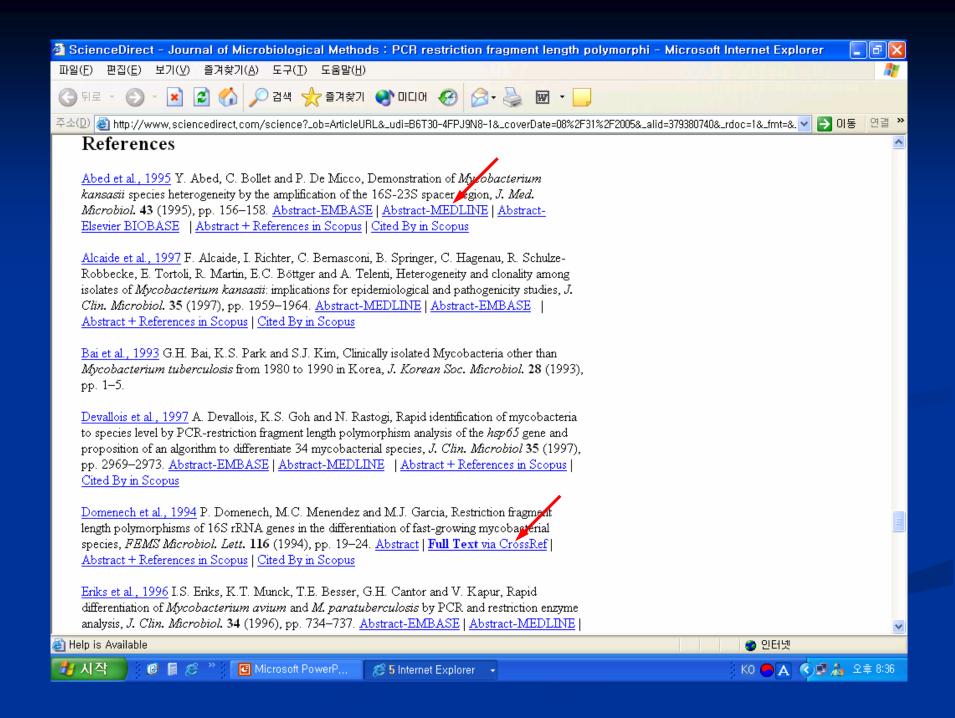


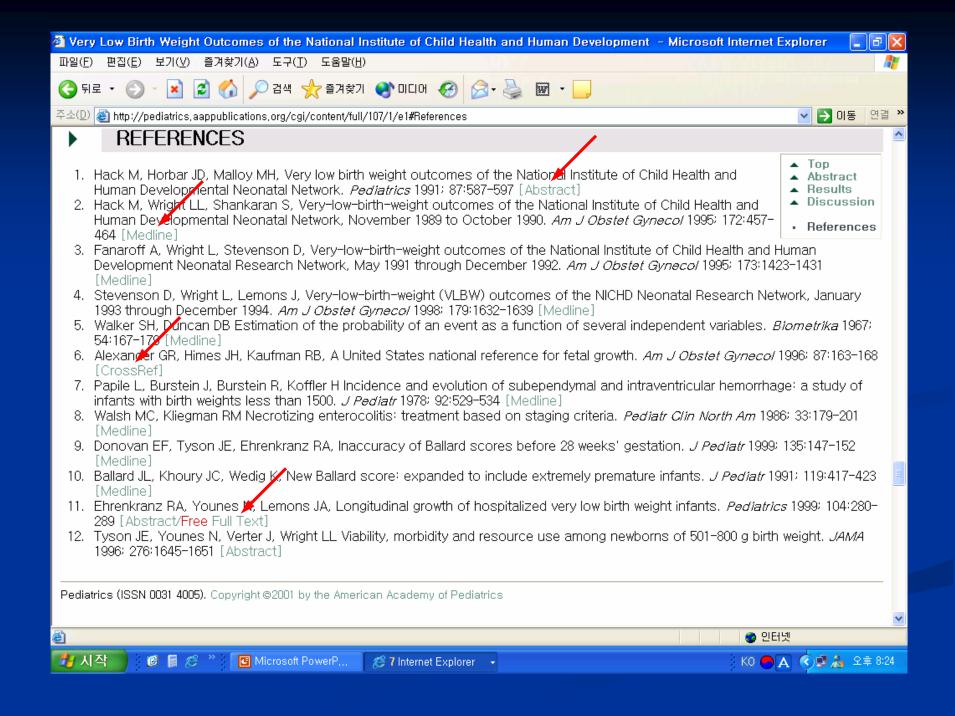


## How?

- 1. What is DOI?
- 2. What is CrossRef?
- 3. What to prepare for CrossRef linking?
- 4. How to participate? (KAMJE의 전략)

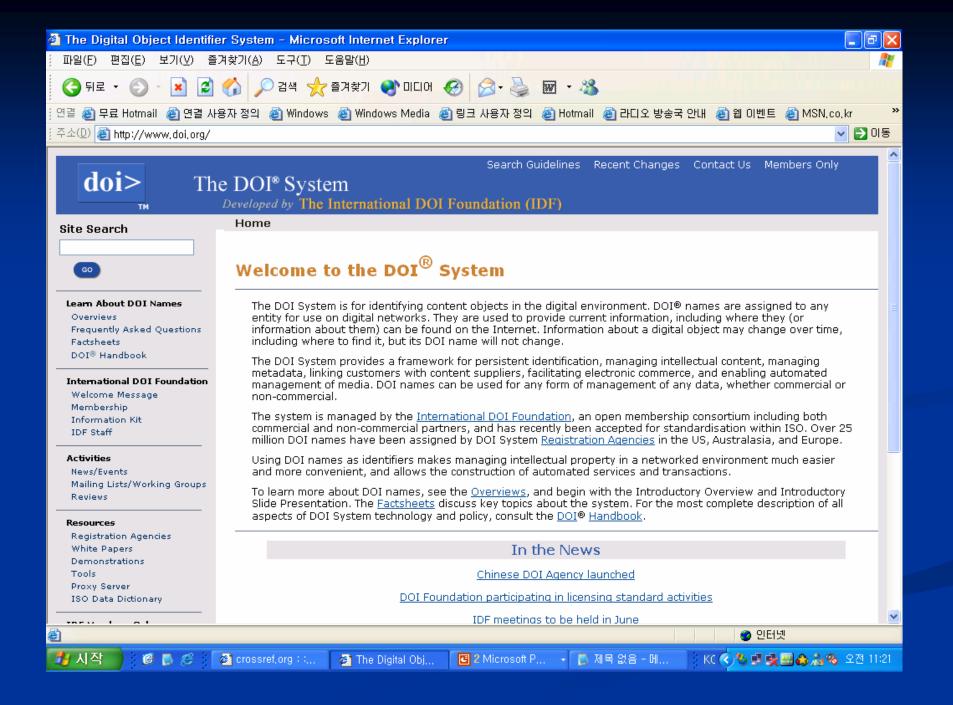






### 1. What is DOI?

- Digital Object Identifier
- A unique alphanumeric string assigned to a digital object
- http://www.doi.org



- Digital Object:
   a piece of intellectual property in an online environment
  - an electronic journal article
  - a book chapter
  - parts of articles figures, graphs, supplementary materials

#### DOI 기능

- Uniquely identifies the content item
- Provides a persistent link to its location on the internet

Print, PDF, and HTML
versions of the same article
will all share the same DOI
(work vs. manifestation)

#### DOI 구조

10.1006/jmbi.1995.0238 prefix suffix

- Prefix는 International DOI Foundation (IDF)에서 부여
- Suffix는 publisher가 임의로 부여

#### **DOI Prefix**

- Prefix는 항상 10으로 시작
- 그 다음은 출판사 식별용 4자리 숫자 10.xxxx
- 한 출판사가 여러 개의 prefix 사용해도 됨
  - → A prefix for each journal title

### 한국의학술지 발행14개 학회의 DOI Prefix (June 28, 2007)

| Head and neck Surgery  |  |
|--|--|
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| Korean Association for the Society of the Liver              |  |
| National Health Personnel Licensing Examination Board of the |  |
| Republic of Korea  |  |
|  |  |

#### **DOI Suffix**

- Must be unique within a prefix
- Has a very flexible syntax
  - any alphanumeric stringbibliographic information can be used
  - a single node or multiple nodes
  - periods, colons, pipes as a node delimiters
  - case insensitive
    10.1006/abc = 10.1006/ABC
- Should be extensible

### Sample DOIs

Academic Press10.1006/jmbi.1998.2354

four letter code for journal year of acceptance a sequential number

American Institute of Physics 10.1063/1.125173

production center a sequential number

American Physical Society 10.1103/PhysRevLett.88.088302

journal abbreviation volume number article code

(The APS has replaced page numbers with an article code that can be assigned on acceptance of an article.)

Nature Publishing Group10.1038/26989

journal title a sequential number

UChicago Press10.1086/301055

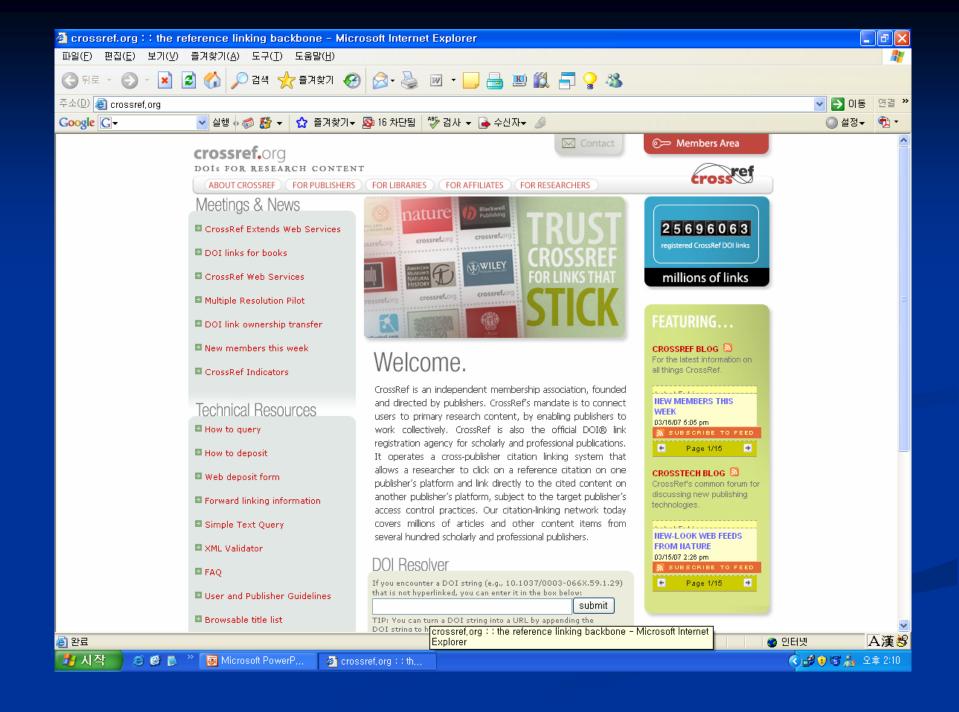
a sequential number

- American Chemical Society10.1021/cm960127g
- American Mathematical Society10.1090/S0002-9939-00-05422-8
- Blackwell Publishers
   10.1046/j.1432-327.2001.02263.x
- CSHL Press 10.1101/gr.10.12.1841
- Geological Society of America
   10.1130/0091-7613(2001)
- IEEE 10.1109/16.8842

- Kluwer 10.1023/A:1003629312096
- MIT Press10.1162/003355300554872
- Oxford University Press10.1093/ageing/29.1.57
- AAAS/Science10.1126/science.286.5445.1679e
- The Royal Society 10.1098/rspa.2001.0787

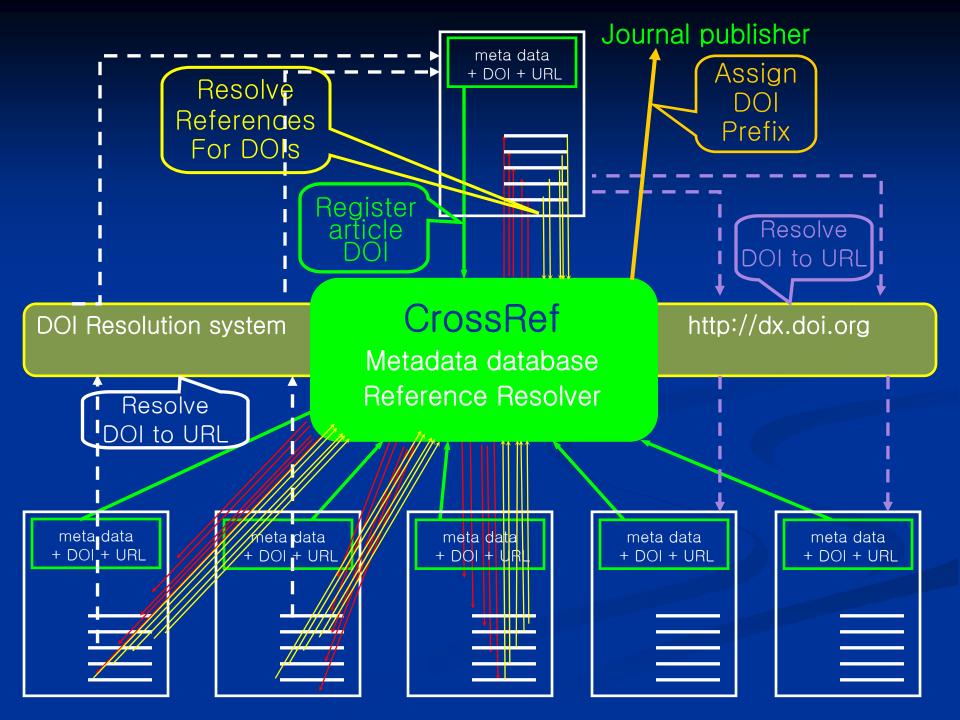
### 2. What is CrossRef?

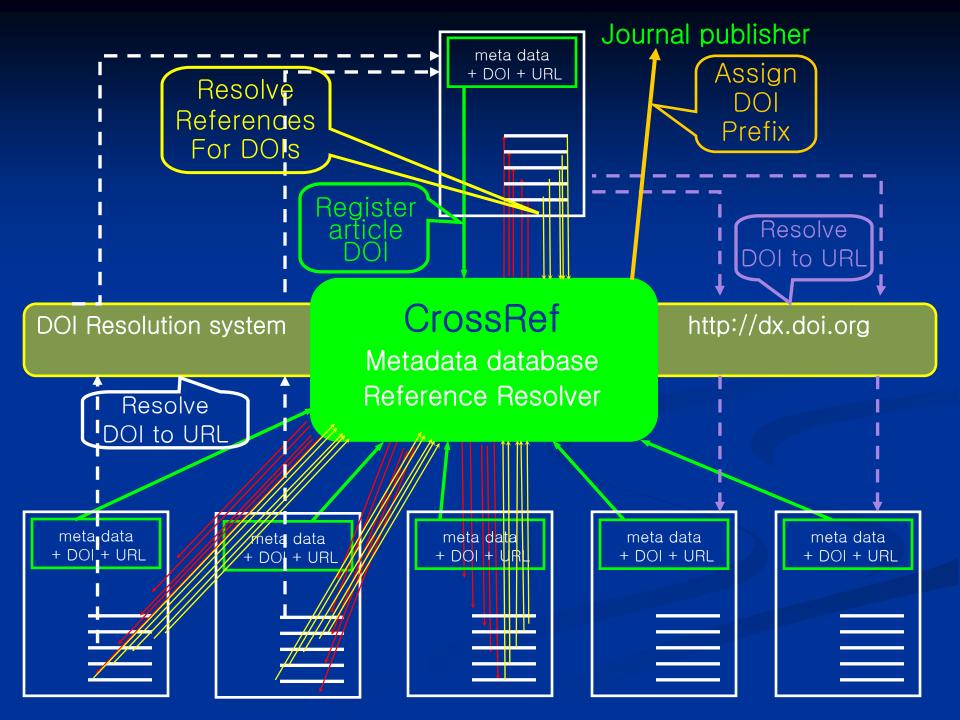
- An independent membership association, founded and directed by publishers
  - John Wiley & Sons, Academic Press, etc.
- Official DOI link registration agency for scholarly and professional publications
- Operates a cross-publisher citation linking system
  - Click on a reference citation on one publisher's platform and link directly to the cited content on another publisher's platform

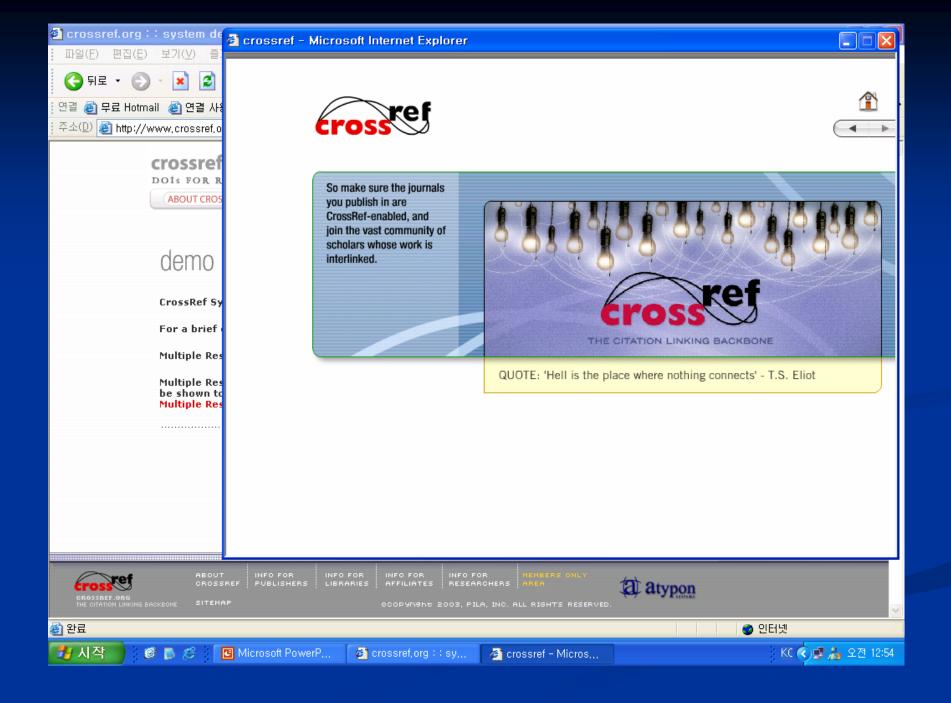


## CrossRef is an IDF Registration Agency (RA) for scholarly publishers

- Assign DOI prefixes
- Accepts DOI deposits for journals, conference proceedings and books
- Holds the metadata associated with DOIs and URLs in the central DOI system
- Provides a retrieval system for the DOIs it registers







#### CrossRef의 기능

- An infrastructure (backbone) for linking citations (references) across publishers
- CrossRef is not an article database
  - does not aggregate full-text content
  - a system of "distributed aggregation"
  - full-text content is linked through a database consisting of minimal publisher metadata

 The only full-scale implementation of the DOI System to date

Covers millions of articles and other content items from several hundred scholarly and professional publishers

#### DOI-based citation links

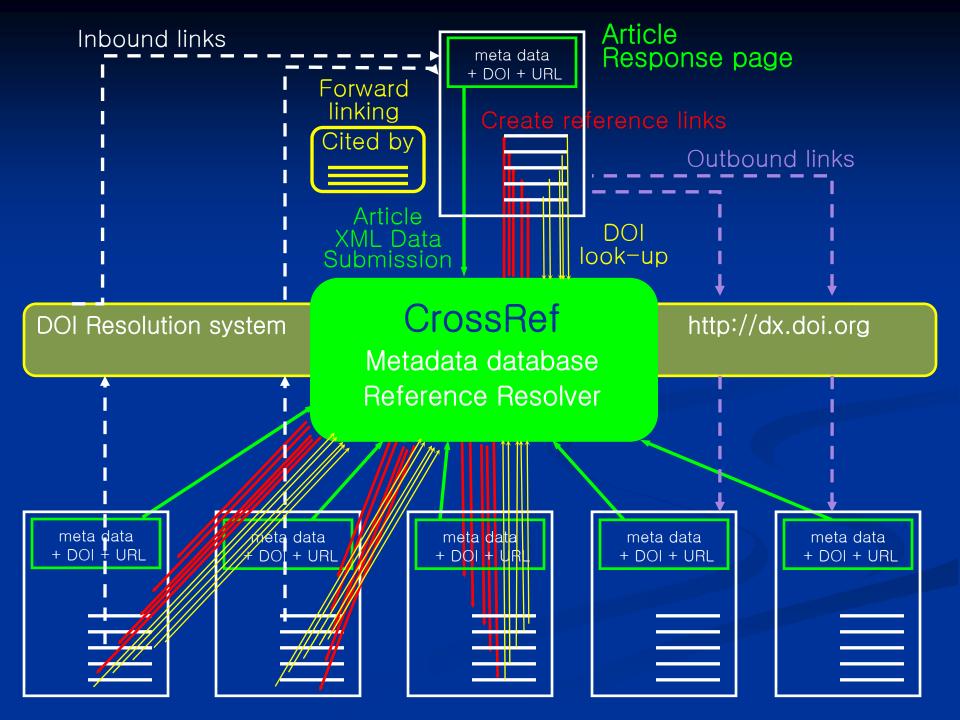
In the CrossRef system, each DOI is associated with a set of basic metadata and a URL pointer to the full text

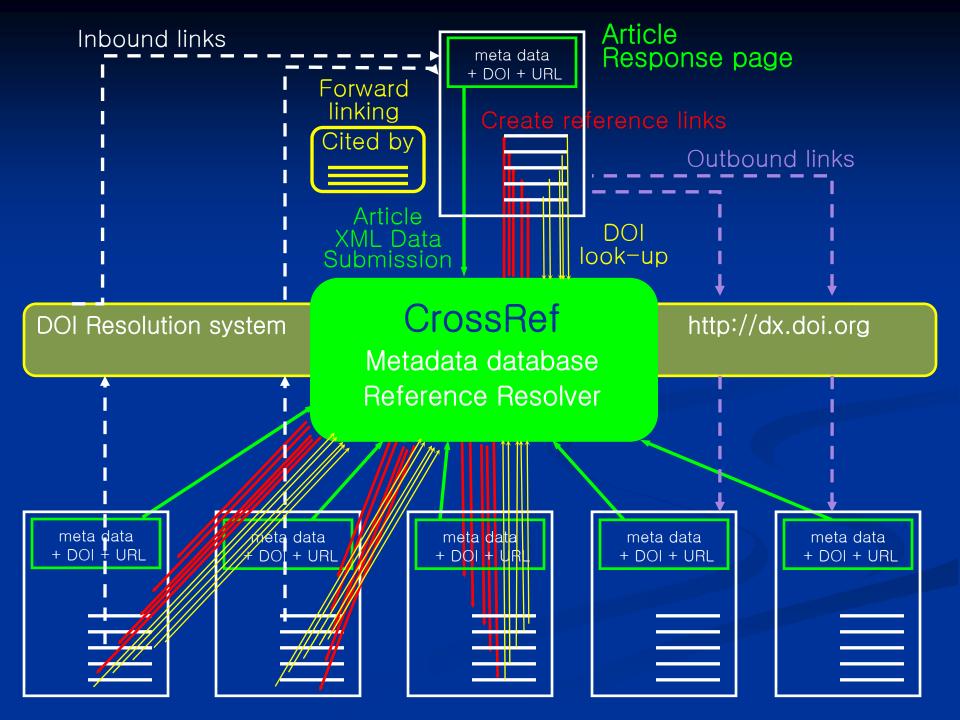
DOI uniquely identifies the content item and provides a persistent link to its location on the internet

## 3. What to prepare for CrossRef linking?

- Join CrossRef
- Get a DOI Prefix
- Assign DOIs to journal articles
- Print/display DOIs on journal articles
- Submits the record to the CrossRef in a strict XML-based DTD format
- Provide active Response Pages in the Internet (i.e. Journal Website)

- Query and look-up DOIs for references
  - Submits the citations contained in each deposited article to the Reference Resolver
- Create Reference links
- Maintain the accuracy of DOIs and URLs in the DOI resolution system
- Maintain the accuracy of the metadata in CrossRef's metadata database





### Article Data Submission (register DOI) inbound link

- in a defined format
  XML DTD and XML Data Rules
- Each record is a triplet {metadata + URL+DOI}
- Metadata about each article
  - journal title, ISSN, first author, year, volume, issue, page numbers
  - may submit additional metadata at its option

#### J Korean Med Sci. 2006 Jun;26(3):379-84

```
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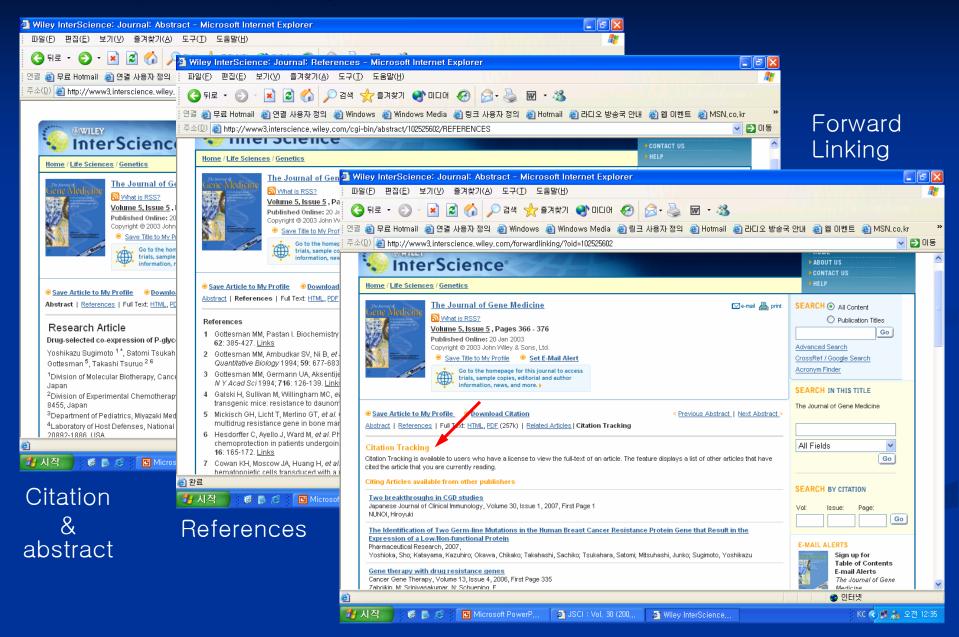
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# Reference Data Submission (DOI look-up) outbound link

- XML Queries
   Metadata about each reference
   ISSN, journal title, first author, volume, issue,
   first page, (citing) Year, Type, Unique key, DOI
- Text Query
- Pipe form

```
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### Response page



## 4. How to participate?

- CrossRef 가입
  - Membership type
  - Membership fee
- 학회 준비사항
  - XML 만들기
  - Response page 만들기
  - Budget

### Membership type

- Publishers
  - CrossRef Membership Fee
     DOI Prefix fee is included
     No need to pay a separate fee to the IDF
  - Transaction Fee
  - Sponsoring publishers

Organizations who act as publishers by operating multi-publisher online journal collections

### Transaction Fee (deposit fee)

for each DOI deposit

| Record Type   | deposit fee |
|---|-------------|
| All Current records (2005–2007)                     | \$ 1.00     |
| Backfile (all content types)                        | \$ 0.17     |
| Components and Data Elements (current and backfile) | \$ 0.06     |
| Book Chapters and Titles                            | \$ 0.17     |
| Journal Titles                                      | free        |

### Non-Linking Fee

- If not linking after 18 months of joining CrossRef
  - a charge of 22 cents per article
  - non-refundable and will not be offset against future retrieval fees
- In order for the CrossRef system to function efficiently and fairly

  - Link journal references
     (to link to other members) → outbound

### CrossRef Members의 의무와 권한

- Have an obligation to link references using DOIs
- Adhere to the requirements of the DOI system
- may "cache" retrieved DOIs
   (i.e. store them in their local systems)
- may appoint Agents
  - to act on their behalf with CrossRef (registering metadata, looking up DOIs)
  - An Agent can represent any number of members

### 우리나라 학술지의 CrossRef 가입 방안

- 각 학회가 독자적으로 가입
- 각 학회가 가입하고 KAMJE를 agent로 지정
- KAMJE가 Sponsoring publisher로 가입
- KAMJE가 Affiliate으로 가입

### 학회 준비 사항

- 예산
  - Deposit fee + (Annual fee)
  - XML 작업비
- Display DOIs
- 파일 만들기
  - Article XML records
  - Response pages Journal full-text website KoreaMed Synapse
  - Reference XML records



### Deposit fee (estimation)

- 4 times/year, 15 papers/issue, 2005-
  - 2005-200760 papers x \$1 x 3yrs = \$180
  - 2008-60 papers x \$1 = \$60
- 6 times/year, 35 papers/issue, 1986-
  - 1986-2004 1,700 papers x \$0.17 = \$289
  - 2005-2007210 papers x \$1 x 3yrs = \$630
  - 2008210 papers x \$1 = \$210

### "Article" & "Reference" XML records

- 따로 만들어 submission 해도 되지만, 동 시에 한 파일로 만들어 deposit 하는 것이 좋음
- PubMed Central XML 만들기
  - → PubMed Central에 submission
  - → CrossRef呈 "automatic submission"

학회가 PubMed Central에 요청 PubMed 레코드도 자동 생성됨

### Submitting Citations to PubMed and CrossRef

http://www.pubmedcentral.nih.gov/about/pubinfo.html

- If a publisher wishes, PMC will submit citations to PubMed and/or CrossRef on behalf of a journal.
- In either case, a citation will be sent automatically on the day that an article becomes available on the PMC web site. Citations usually appear in PubMed the day after they are submitted.
- For CrossRef, the publisher must have a CrossRef account that PMC can use for submission. PMC does not have its own CrossRef account.

### Response pages

■ 각 학회의 학술지 website에 HTML fulltext 문서 준비 적어도 참고문헌은 linking이 가능하도록 HTML로 준비

bibliographic information (citation)
Abstract
main text
references

- PubMed Central의 full-text 원문으로 연 결
- PubMed Central XML 파일을 그대로 또는 HTML로 변환하여 학회 website에서 제공 JKMS JHEEP
- KoreaMed Synapse





| KoreaMed            |       |          |  |
|---------------------|-------|----------|--|
| Search KoreaMed 💌 i | or or | Go Clear |  |

Journal Browser Citation Matcher

By Journal Title





Abstract

Abstract + references | Full-text PDF

J Korean Med Sci. 2007 Jun;22(3):387-392.

Intima-media Thickness and Arterial Stiffness of Carotid Artery in Korean Patients with Behcet's Disease.

Moo Yong Rhee, Hyun Kyu Chang, Seong Kyu Kim

Division of Cardiology, Department of Internal Medicine, College of Medicine, Dongguk University, Gyeongiu, Korea., Chang Hyun Kyu Rheumatism Clinic, Cheonan, Korea., Division of Rheumatology, Department of Internal Medicine, College of Medicine, Dankook University, Cheonan, Korea, Mkimsk714@cu.ac.kr

Behcet's disease (BD) is a systemic vasculitis involving diverse sizes of arteries and veins. We performed this study to evaluate the vascular changes by assessment of the arterial stiffness and intima-media thickness (IMT) of carotid artery in Korean patients with BD. Forty-one patients with BD and age-, and sex-matched 53 healthy subjects were recruited in this study. Carotid arterial stiffness and IMT were assessed by using highresolution B-mode ultrasonography. Arterial stiffness parameters such as carotid arterial distensibility coefficient, stiffness index, and incremental elastic modulus (E(inc)) were significantly increased in BD patients compared with those in healthy subjects, but not in IMT. Positive relationship was noted between age and IMT, whereas age of onset was significantly associated with arterial stiffness in BD. This finding suggests impaired endothelial function before visible structural changes of arterial wall in BD. Age and age of onset may be an independent risk factor for carotid IMT and arterial stiffness, respectively. Further studies in more large populations are required to confirm our results.

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Search KoreaMed V for

Go Clear

Basic Search Journal Browser Citation Matcher

By Provider By Journal Title





These results suggest that interaction between LMP1 and IRF7 may be necessary for the signal transduction pathway of LMP1 and/or IRF7. Further experiments will be needed in order to provide additional details about the relationship between LMP1 and IRF7 in the signaling pathway of Epstein-Barr virus infected B-lymphocytes.

#### References

 Hale YM, Pfvffer GE, Salfinger M. Laboratory diagnosis of mycobacterial infections; new tools and lessons learned. Clin Infect Dis 2001;33: 834-46.







2. American Thoracic Society, Diagnosis and treatment of disease caused by nontuberculous mycobacteria. Am J Respir Crit Care Med 1997:156: S1-25.







 British Thoracic Society, Management of opportunist mycobacterial infections: Joint Tuberculosis Committee Guidelines 1999, Thorax 2000; 55: 210-8.







4. Koh WJ, Kwon OJ, Lee KS. Nontuberculous mycobacterial pulmonary diseases in immunocompetent patients, Korean J Radiol 2002;3: 145-57.













5. Chung MJ, Lee KS, Koh WJ, Lee JH, Kim TS, Kwon OJ, Kim S. Thin-section CT findings of nontuberculous mycobacterial pulmonary diseases; comparison between Mycobacterium avium-intracellulare complex and Mycobacterium abscessus infection. J Korean Med Sci 2005; 20: 777-83.















1011-8934 Print 1598-6357 On-line Indexed in MEDLINE SCI & KoreaMed

☆ 의 검색 ★ 즐겨찾기 ◆ 미디어 ㈜ ☆ >

연결 🚳 무료 Hotmail 🥘 연결 사용자 정의 🙆 Windows 圈 Windows Media 🚳 링크 사용자 정의 🙆 Hotmail 🚳 라디오 방송국 안내 阉 웹 이벤트 🍯 MSN,co.kr



Search JKMS Search Full-text

#### lourna

Subscriptions
Executive board
Editorial board
Editorial policy
Editorial process
Categories
Conflict of interest
Manuscript format
e-submisson





주소(D) 🎒 http://jkms.org/fulltext/html/jkms21591h.html

Joon Sik Kim, Ki Chul Chc 파일(F) 편집(E) 보기(V) 즐겨찾기(A) 도구(T) 도움말(H)

Departments of Physiolo 영무로 중 중 경찰기(A) 모구(T) 도움말(H)

School, Gwanqju, Korea.

The present study was of a role in the regulation of were treated with NG-niff weeks. Control rats wow K-ATPase, type 3 Na/H evand thiazide-sensitive Noby Western blot analysis. The treatment with L-NA pressure. Total and fract creatinine clearance remiconcentration was significativity of Na, K-ATPase vand TSC was also increated the concentration of the concentration of the concentration was significativity of Na, K-ATPase vand TSC was also increated the concentration was significated to the concentration was significated to the concentration was significated to the concentration was significantly of the concentration was significantly to the concentration was significantl

(33%), and arthralgia/arthritis (30%). However, the prevalence of testicular pain or tenderness was higher (24%) than reported previously and only three (11.5%) had HBsAg positivity without liver enzyme elevation. Nine patients (33%) had a five-factor score (FFS) of 2. Fourteen patients (52%) responded to treatment, 2 patients relapsed and 4 died within 1 yr of diagnosis. During a median follow-up of 55.5 months, three of the four PAN-related deaths had an initial FFS of 2. The clinical features of PAN were not significantly different from those reported previously. However, testicular pain or tenderness was more frequent and patients with a high FFS tended to have a poorer prognosis

#### INTRODUCTION

Polyarteritis nodosa (PAN) is an uncommon systemic necrotizing vasculitis and is characterized by the presence of inflammatory reactions of medium or small-sized blood vessels with multiorgan involvements including skin, kidney, peripheral nerve, muscle, gastrointestinal tract and others (B1, B2). PAN was first described by Kussmaul and Maier in 1866 and many reports have been issued on its clinical features. In Korea, dozens of case reports and two papers on cutaneous PAN have been published (B3, B4). Although the prevalence of hepatitis B is high in Korea and the association between PAN and hepatitis B is well known, no study about clinical features of systemic PAN has been conducted. Thus we analyzed the clinical features of classic PAN in Korea.

#### **MATERIALS AND METHODS**

Subjects

We searched the database of Seoul National University Hospital for adult PAN patients (age ≥16 yr old) between January 1990 and July 2003. Thirty six patients were first suspected of having PAN and 27 of these satisfied the American College of Rheumatology (ACR) 1990 criteria for the classification of PAN. Thus, 9 patients were excluded; 4 had a limited form of PAN and five had a cutaneous form. All limited and cutaneous PAN patients showed no evidence of other organ involvement or of a saccular aneurysm by angiography. The male-to-female ratio was 1.7:1, mean age of onset was 47.4±20 yr and the median follow up period was 55.5 months (range 0.6-162 month).



### XML 작업비

- PubMed Central XML 만들기
  - 레코드 당 약 2-3시간 소요
  - 5만원/article
- "Article" & "Reference" XML 만들기
  - PubMed Central XML의 2/3 정도
  - 3만원/article
- Response page 만들기
  - Citation + Abstract+ References
  - References에 DOI 삽입

"Article" XML
+
"Reference" XML
+
Response page
HTML (XML)

PubMed Central XML

### Display DOIs

### In bibliographic headers

- Online and Print
- doi:10.1006/jmbi.1998.2354available via http://dx.doi.org/10.1006/jmbi.1998.2354

### In a citation

- Add DOI at the end
- Kornack, D. Rakic, P. (2001). Cell Proliferation Without Neurogenesis in Adult Primate Neocortex. Science. 294 (5549), 2127-2130, doi:10.1126/science.1065467.

### As a Reference link

- [CrossRef]
- S. S. Magavi, B. R. Leavitt, J. D. Macklis, *Nature* 405, 951 (2000) [CrossRef][ISI][Medline]
- Behind the display text of "CrossRef" is the URL <a href="http://www.sciencemag.org/cgi/external\_ref?access\_num=1">http://www.sciencemag.org/cgi/external\_ref?access\_num=1</a> 0.1038/35016083&link\_type=DOI

### KAMJE의 전략

- KAMJE가 sponsoring publisher로 CrossRef에 가입
  - 학술지별로 Prefix 확보
  - 학술지의 DOI 체계 확립 학술지별 suffix 구조 권고안 마련

- KoreaMed Synapse 서비스 개발
  - Response page
  - Reference linking을 위해 현재의 KoreaMed 레코드에 references를 추가한 모습
  - Journal LinkOut 기능을 이용하여 학술지의 원문으로 link
  - 학술지 website를 response page로 설정하 여도 됨 (multiple resolution)
    - 그러나 KAMJE가 sponsoring publisher로서 의무와 책임 때문에 KoreaMed Synapse를 꼭 경유해야 함

- PubMed Central 등재와 동시 진행 영어로 발행하는 Medline 학술지는 모두
- CrossRef에만 가입하는 학술지도 가능하면 본문을 모두 XML 처리 적어도 figures & tables는 포함

### 마치면서

- DOI, CrossRef, PubMed Central
  - 국제적인 서지정보 교류망에 통합되기 위한 일련의 과정
  - 동시 다발적으로 진행
  - 더 이상 미루지는 않았으면...

Globalization

VS

Isolation