

## SOFTWARE FOR MODELING DELIVERY AND PENETRATION OF ANTIBODY CONJUGATES

### SUMMARY

The National Cancer Institute (NCI) Laboratory of Molecular Biology is seeking parties interested in collaborative research to co-develop targeted delivery of anti-cancer agents in solid tumors.

### REFERENCE NUMBER

E-060-2012

### PRODUCT TYPE

- Software

### KEYWORDS

- Drug Design
- Anti-Cancer Modeling
- Tumor Delivery
- Dosing
- Tumor Penetration

### COLLABORATION OPPORTUNITY

This invention is available for licensing.

### CONTACT

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### DESCRIPTION OF TECHNOLOGY

The National Cancer Institute (NCI) [Laboratory of Molecular Biology](#) is seeking parties interested in collaborative research to co-develop targeted delivery of anti-cancer agents in solid tumors.

Available for co-development and licensing is software for modeling the permeability and concentration of intravenously administered antibody anti-cancer agent conjugates in solid tumors. The models can be used to determine optimal dosing regimen of a therapeutic in a particular cancer type. Thirty factors that affect delivery rates and efficiencies are analyzed as variables in generating the models.

### POTENTIAL COMMERCIAL APPLICATIONS

- Drug design

- Combination therapy
- Personalized medicine

## COMPETITIVE ADVANTAGES

Accurate permeability modeling of anti-cancer therapeutics.

## INVENTOR(S)

Byungkook Lee (NCI)

## DEVELOPMENT STAGE

- Discovery (Lead Identification)

## PUBLICATIONS

1. Fujimori K, et al. A modeling analysis of monoclonal antibody percolation through tumors: a binding-site barrier. *J Nucl Med.* 1990 Jul;31(7):1191-1198. [PMID 2362198]
2. Jain RK. Delivery of molecular and cellular medicine to solid tumors. *Adv Drug Deliv Rev.* 2001 Mar 1;46(1-3):149-168. [PMID 11259838]
3. Thurber GM, et al. Antibody tumor penetration: transport opposed by systemic and antigen-mediated clearance. *Adv Drug Deliv Rev.* 2008 Sep;60(12):1421-1434. [PMID 18541331]
4. Li Y, et al. *Adv Drug Deliv Rev* (2011).
5. Pak Y, Zhang Y, Pastan I, Lee B. Antigen shedding may improve efficiencies for delivery of antibody-based anticancer agents in solid tumors. *Cancer Res.* 2012;72:3143-52. [PMCID: 3408876]
6. Chen KC, Kim J, Li X, Lee B. Modeling recombinant immunotoxin efficacies in solid tumors. *Ann Biomed Eng.* 2008; 36:486-512 [PMID: 18183487].

## PATENT STATUS

- **Not Patented:** Software/Research Tool. Patent protection is not being pursued for this technology.

## THERAPEUTIC AREA

- Cancer/Neoplasm