

Form B-5

Date (日付)

30/5/2012 (Date/Month/Year: 日/月/年)

Activity Report -Science Dialogue Program-
(サイエンス・ダイアログ事業 実施報告書)

- Fellow's name (講師氏名): Johan Mikael Unga (ID No. P11791)

- Participating school (学校名): Fukui Prefectural Fujishima Senior High school

- Date (実施日時): 24/5/2012 (Date/Month/Year: 日/月/年)

- Lecture title (講演題目): (in English) Liposomes - from basic chemistry to application as drug delivery systems

(in Japanese)

- Lecture summary (講演概要): Please summary your lecture 200-500 words.

Liposomes are particles consisting of one or more lipid double layers which are very similar to the membranes of cells. The double layers consist of lipids that have a hydrophilic (water loving) part and a hydrophobic (water hating) part. This dual nature makes them spontaneously form double layers in water so that the hydrophobic part is "hidden" from the water and only the hydrophilic part exposed. The double layers can then be made to form particles (spheres) where the interior is water and also the surrounding is water. The lipid double layer makes exchange of molecules difficult between the interior and the surroundings. This fact can be used to create drug-carrier particles by enclosing drugs in the liposomes. It is also possible to make the liposomes targeting by attaching targeting molecules on the surface. In this way the drug can be carried to certain cells in the body for example cancer cells.

This lecture aimed to explain why and how liposomes are formed. To do that concepts like hydrophobicity, hydrophilicity and surface activity had to be explained. Further, a few examples of liposomes as drug delivery systems was given and also how the properties of the liposomes can be changed to improve the efficacy as drug delivery particles was covered.

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 75 min (分), Q&A time (質疑応答時間) 20-30 min (分)

◆Lecture style (ex.: used projector, conducted experiments)

(講演方法 (例: プロジェクター使用による講演、実験・実習の有無など))

Powerpoint and projector, a couple of experiments/demonstrations were performed

◆Interpretation (ex.: assistance by accompanied person, provided Japanese explanation by yourself) (通訳 (例: 同行者によるサポート、講師本人による日本語説明))

The inviting teacher at the school helped with some interpretations

◆Name and title of accompanied person (同行者 職・氏名)

◆Other note worthy information (その他特筆すべき事項):

- Impressions and opinions from accompanied person (同行者の方から、本事業に対する意見・感想等がありましたら、お願いいたします)