

Lab on a Chip:

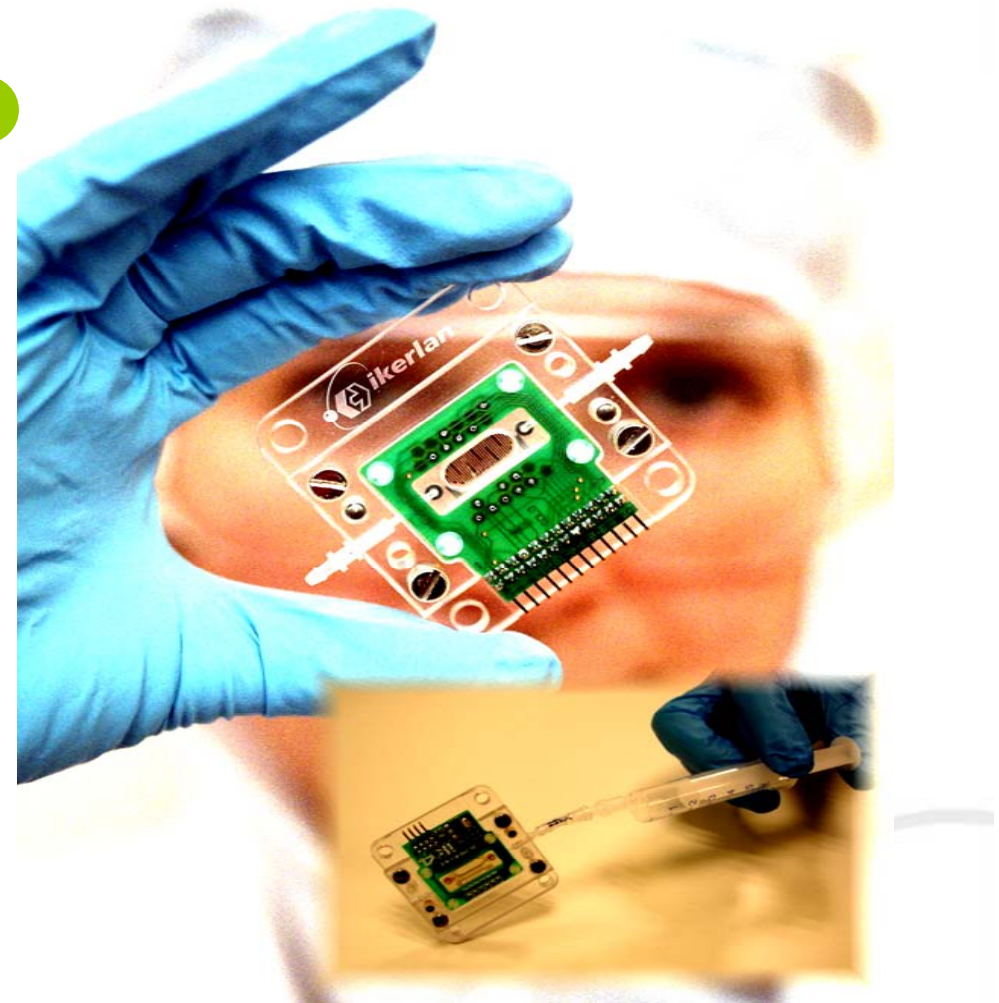
A trip from the tube to the microchip

Laboratorio en un chip:

La transición de la probeta al microchip

Laborategia txip batean:

Probetatik mikrotxip batera trantsizioa



IKERLAN-IK4 - 24th October 2007

Organized by:



Collaborators:

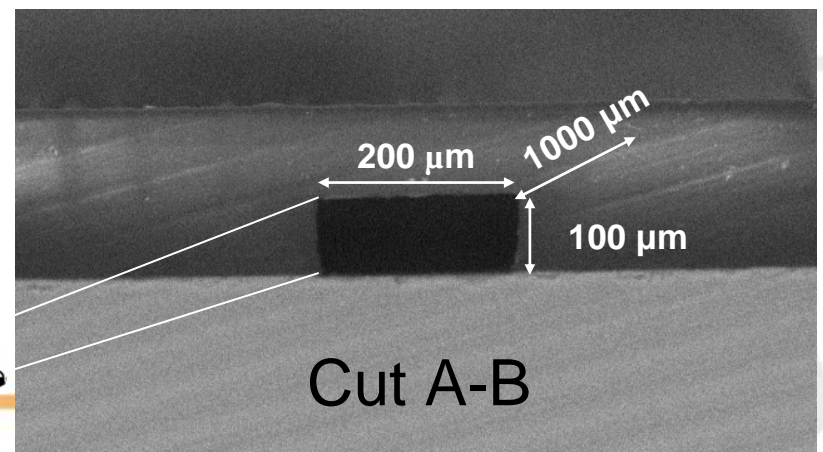
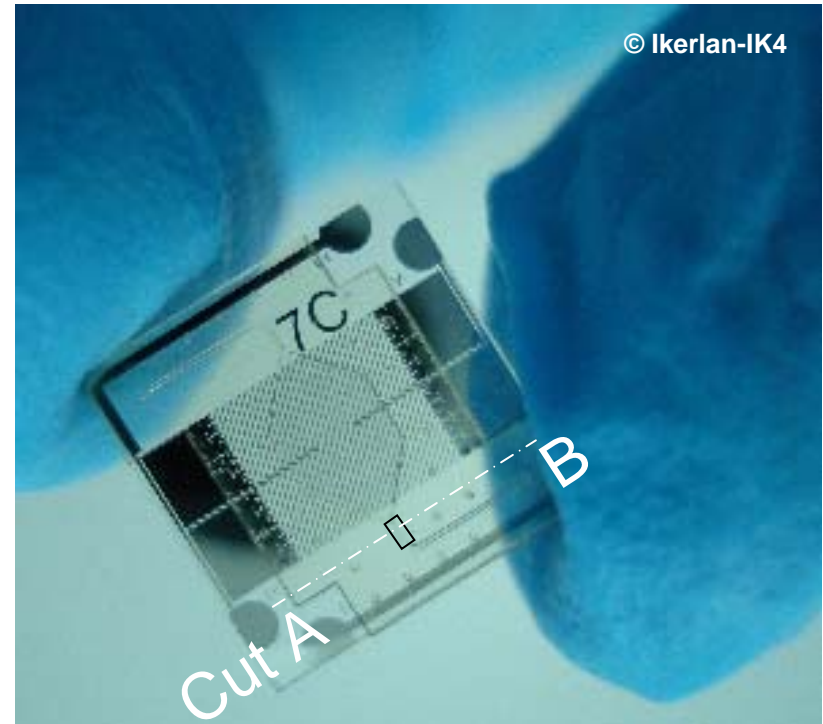
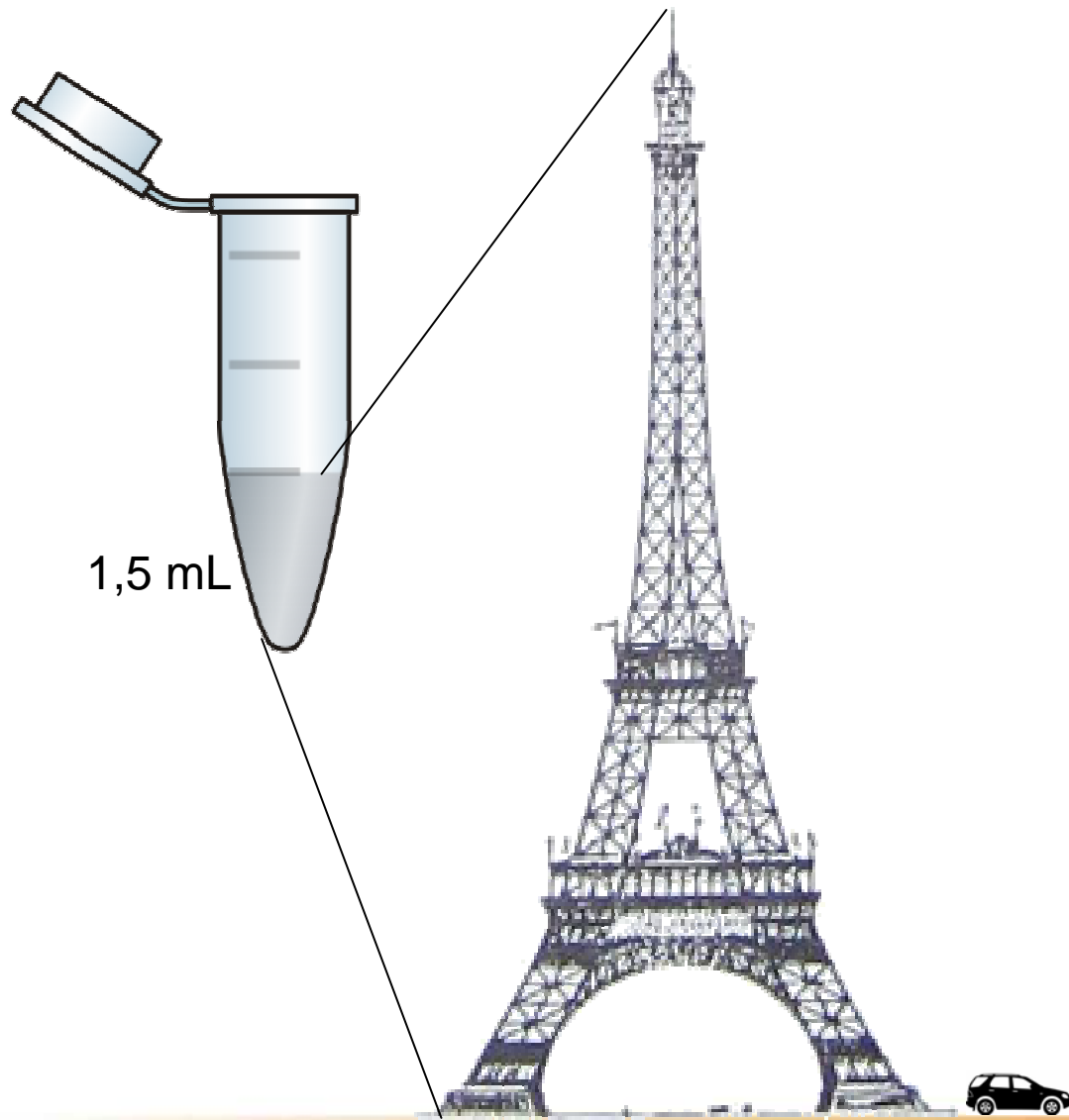


Meeting Objective

- ❑ To gather a group of people with different expertise, knowledge, and needs to provide all possible angles of a social need and its solution
- ❑ To diffuse the results that we have developed to interested companies (personal networking)
- ❑ To move forward the existing relationship between Microtechnologist and Biologist
- ❑ To enjoy talking about Lab on a Chip



Lab on a Chip: A trip from the tube to the chip



Social Problem

High demand
of point of
care devices

Real food, human,
environmental sample
preparation



Integration of Sample
preparation and
Detection

Current strategy

Available solutions

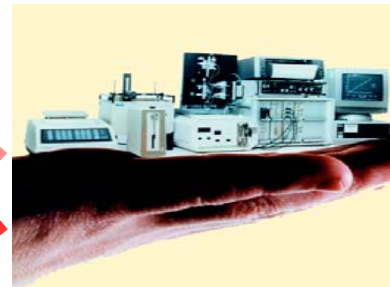


+



Lab on a Chip
strategy

Microtechnology
+
Biology



Future solutions

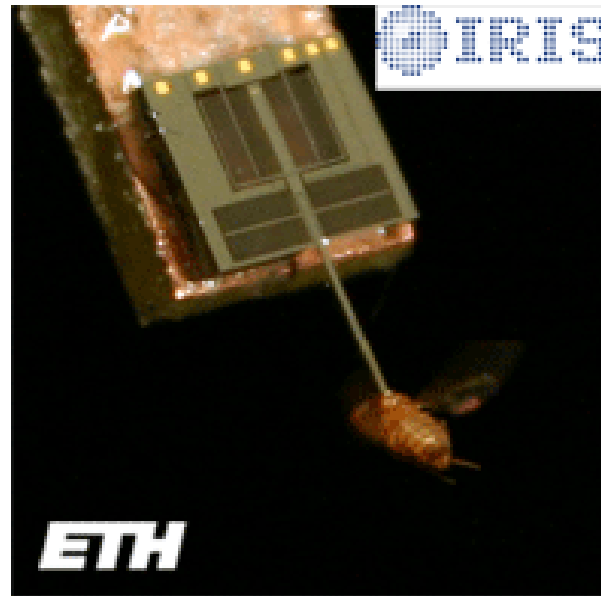
We need to create new
Labonchips by mixing
biology and
engineering ingredients

The key point resides
on creativity rather than
technique development

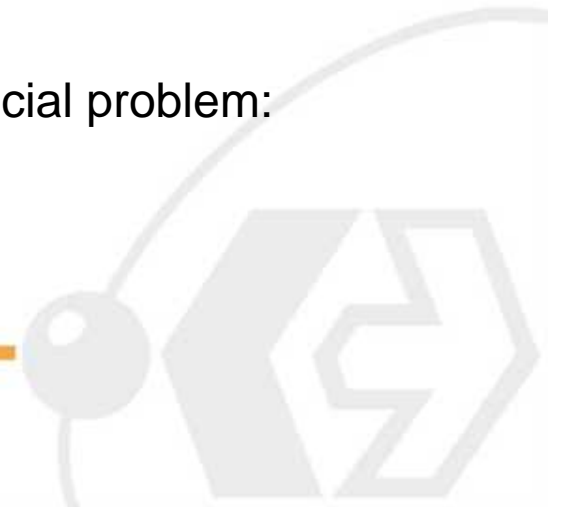
We need to release our
mind from any dogma
and conventional
methodology

What MicroBiotechnology can do for Life Sciences?

If we go to far we will end up...



This is really amazing but we should not forget the social problem:
the lack of portable diagnostic devices



Ten rules/challenges to develop a successful Lab on a Chip

1. High throughput fabrication process
2. Few materials involved
3. Authentic sample preparation
4. Simple fluidic control
5. High sensitivity and specificity
6. Small amount of measured sample
7. Reagents stored within the Lab on a Chip
8. Fluidic microdevices easy to handle
9. Low cost disposable components
10. Regulatory issues

Jesus M.Ruano-Lopez. Fabrication strategies to integrate 3D microfluidic networks with biosensors to manufacture Lab on a Chip devices. *Measurement + Control*, Vol.40, No. 4, pp. 111-115