



Dipartimento Integrato Interistituzionale
DIPINT



Primo Workshop *Clinical Research and Innovation*

Venerdì 4 luglio 2014 9.00 - 19.00
Aula Magna - Polo Fibonacci - Largo Pontecorvo 3, Pisa

Ricercatori dell'Università di Pisa e dell'Azienda Ospedaliera Universitaria Pisana presentano i progetti sviluppati nei diversi ambiti delle scienze della vita
Esperti del MIT e dell'Henry Ford Health System illustrano le potenzialità sociali ed economiche di un sistema integrato tra ricerca, clinica, imprese e soggetti regolatori

Programma

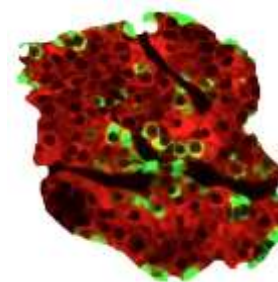
- 9.00 - Saluti delle Autorità
- 9.20 - Mark Cotkchia,
*Vice president and Chief innovation officer
Henry Ford Health System (HFHS)*
Serenella Sferza,
*Co-Director of the MIT-Italy Program
(MIT)*
- 9.30 - Sessione 1: *Oncologia*
- 11.10 - Break: Coffee & Conversation
- 11.30 - Sessione 2: *Cardiovascolare,
endocrinologia e genetica*
- 13.10 - Lunch
- 14.10 - Sessione 3: *Imaging, neuroscienze
e immunologia*
- 16.00 - Break: Coffee & Conversation
- 16.20 - Sessione 4: *Nuove tecnologie
e metodologie in medicina*
- 18.30 - Conclusioni

Nel corso delle sessioni sono previsti interventi di Spin-off e laboratori dell'Università di Pisa:
BioBeats, BioCare, Centro Nina, Centro Nutraceutica, Centro Piaggio, Endocas, Express3d, FabLab, IV Tech, PlasmaTech, Quipu.

Relatori

Alessandro Antonelli
Valentina Battaglia
Stefano Benettini
Antonella Bertozzi
Generoso Bevilacqua
Stefano Bombardieri
Ubaldo Bonuccelli
Maurizia Brunetto
Laura Carrozzi
Romano Danesi
Vittantonio Di Bello
Gualtiero Fantoni
Vincenzo Ferrari
Franco Filippini
Gino Fornaciari
Nicola Funel
Margherita Giorgetti
Manuela Giovannetti
Francesco Giunta
Filippo Graziani
Fabio Guarracino
Andrea Guzzetta
Piero Marchetti
Claudia Martini
Lucia Migliore
Paola Migliorini
Maria Concetta Morrone
Antonio Giuseppe Naccarato
Emanuele Neri
Paolo Domenico Parchi
Anna Petronio
Pietro Pietrini
Mauro Pistello
Marco Romanelli
Elisabetta Rosellini
Ferruccio Santini
Michelangelo Scaglione
Enzo Pasquale Scilingo
Anna Solini
Biagio Solito
Stefano Taddei
Paolo Vitti

Proteggere le beta cellule
per prevenire e curare
il diabete mellito



Piero Marchetti

Dip. Medicina Clinica e Sperimentale

Dip. Oncologia, Trapianti e Nuove Tecnologie

AOUP

SD Endocrinologia e Metabolismo dei Trapianti

Giuseppe Barillaro

Dip. Ingegneria dell'Informazione

Università di Pisa

La partecipazione è aperta a tutti; è necessaria l'iscrizione on line su <http://tinyurl.com/eventoDipintPisa2014>

Per informazioni contattare: Ufficio Valorizzazione della Ricerca
- Dipartimento Integrato Interistituzionale (Dipint) -
uvar@dipint.unipi.it





NORTH AMERICA AND CARIBBEAN

More healthcare dollars were spent on diabetes in this region than any other

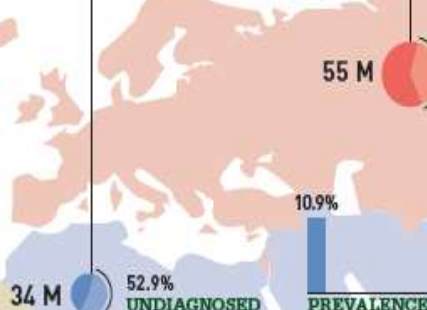
1 in 10 adults in this region has diabetes



MIDDLE EAST AND NORTH AFRICA

1 in 9 adults in this region has diabetes

More than half of people with diabetes in this region don't know they have it



EUROPE

1 out of every 3 dollars spent on diabetes healthcare was spent in this region

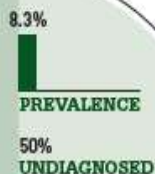
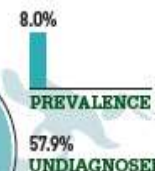
21.2 million people in this region have diabetes and don't know it



WESTERN PACIFIC

1 in 3 adults with diabetes lives in this region

6 of the top 10 countries for diabetes prevalence are Pacific Islands



WORLD

371 M

people living with diabetes



SOUTH AND CENTRAL AMERICA

Only 5% of all healthcare dollars for diabetes were spent in this region

1 in 11 adults in this region has diabetes



AFRICA

Over the next 20 years, the number of people with diabetes in the region will almost double

This region has the highest mortality rate due to diabetes



SOUTH-EAST ASIA

1 in 5 of all undiagnosed cases of diabetes is in this region

1 in 4 deaths due to diabetes occurred in this region

ITALY

Italy is one of the 47 countries of the IDF EUR region.

More than 371 million people have diabetes in the world and more than 55 million people in the EUR Region; by 2030 this will rise to 64 million.

There were 3,903,060 cases of diabetes in Italy in 2012.

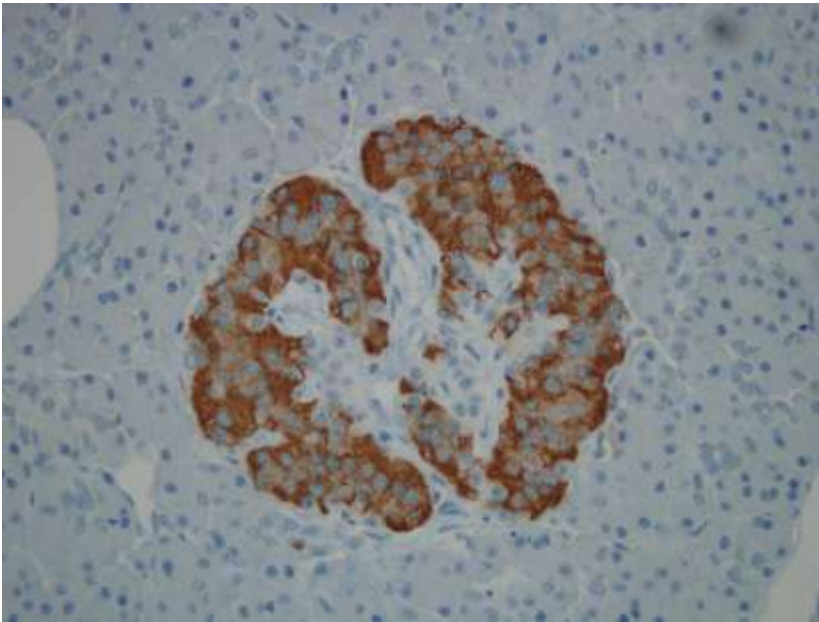


IDF membership

DIABETES IN ITALY - 2012

Total adult population (1000s) (20-79 years)	45,704.16	Number of deaths in adults due to diabetes	28,354.00
Prevalence of diabetes in adults (20-79 years) (%)	8.54	Mean healthcare expenditures due to diabetes per person with diabetes (USD)	3,504.22
Total cases of adults (20-79 years) with diabetes (1000s)	3,903.06	Number of cases of diabetes in adults that are undiagnosed (1000s)	1,622.50

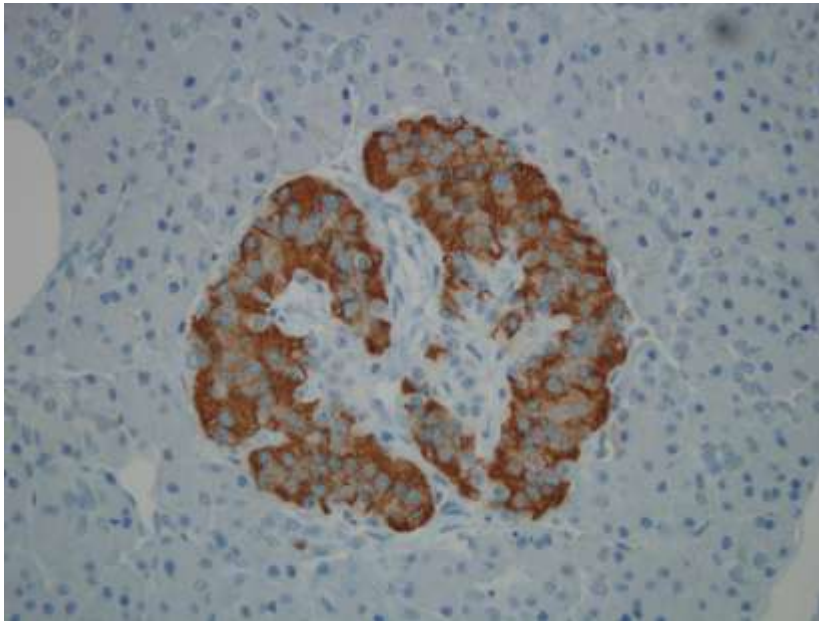
The beta cell in diabetes



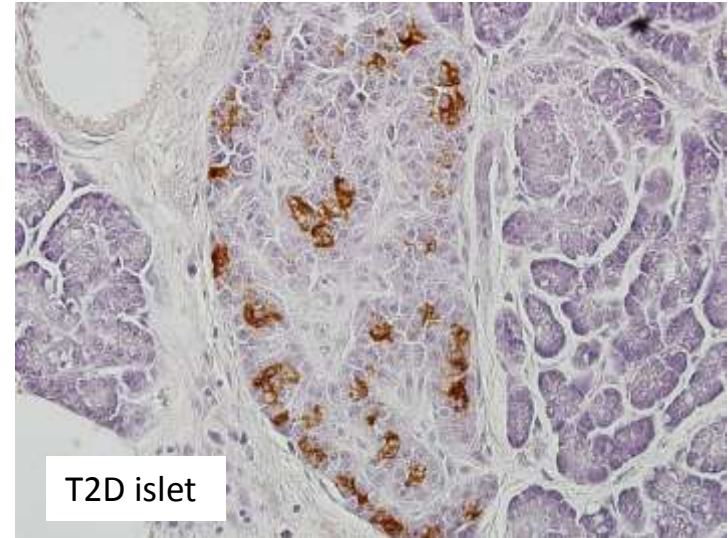
normal islet



The beta cell in diabetes



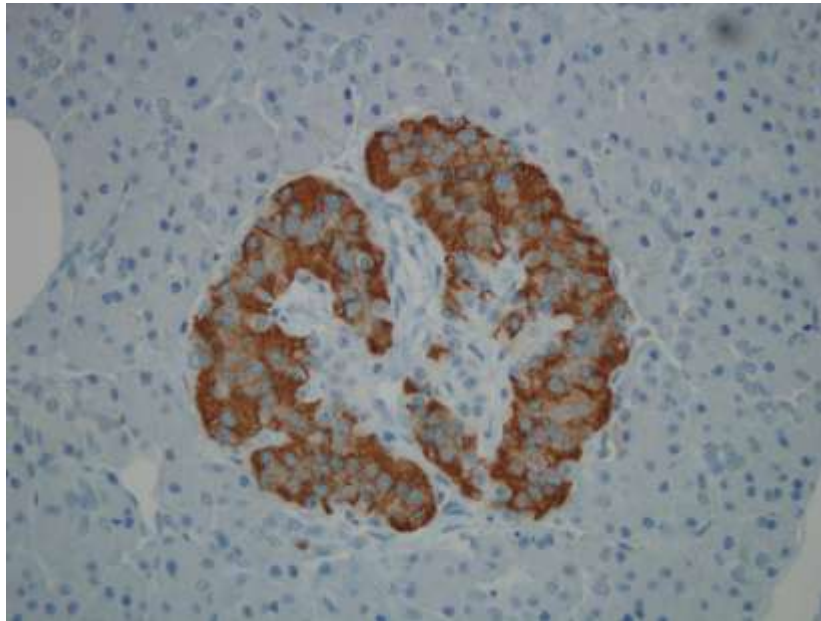
normal islet



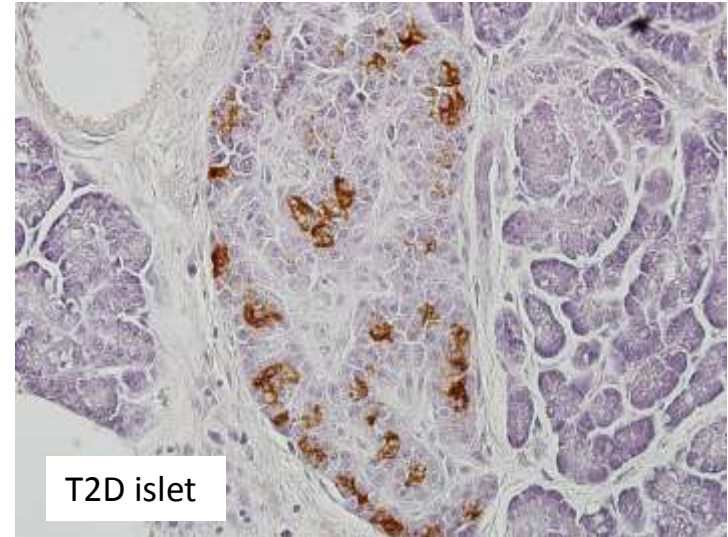
T2D islet



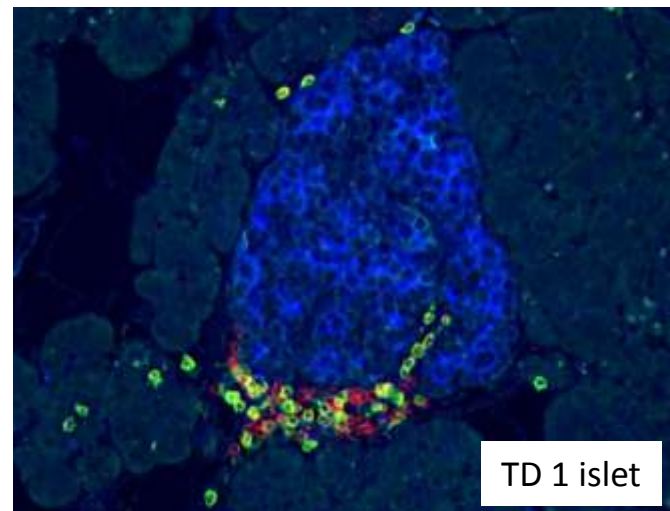
The beta cell in diabetes



normal islet

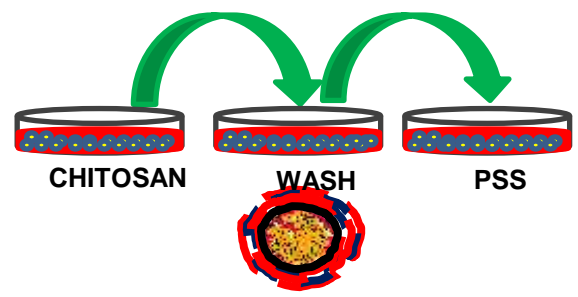
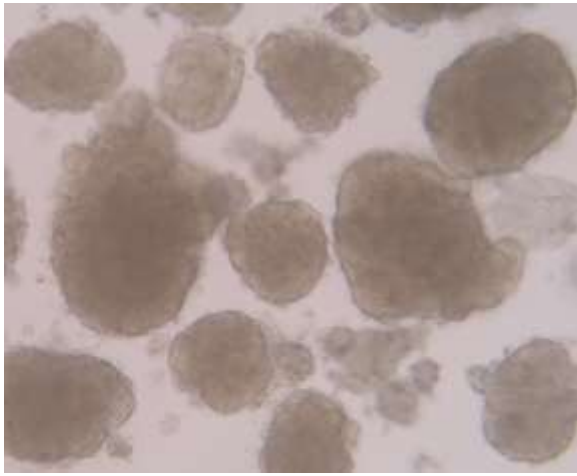


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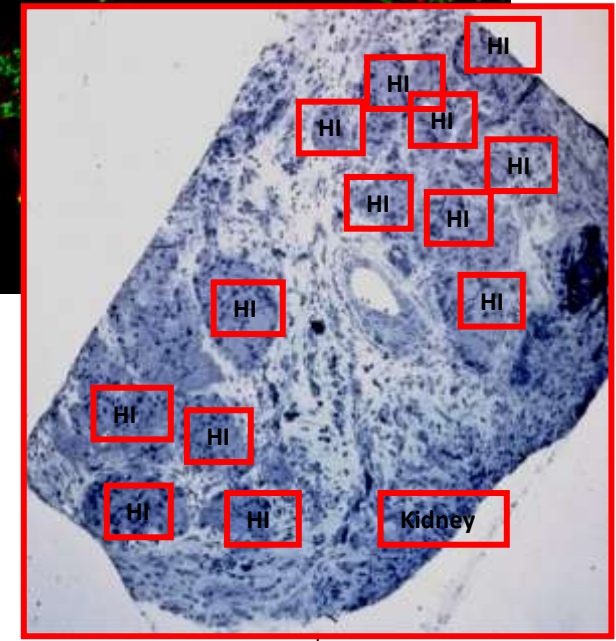
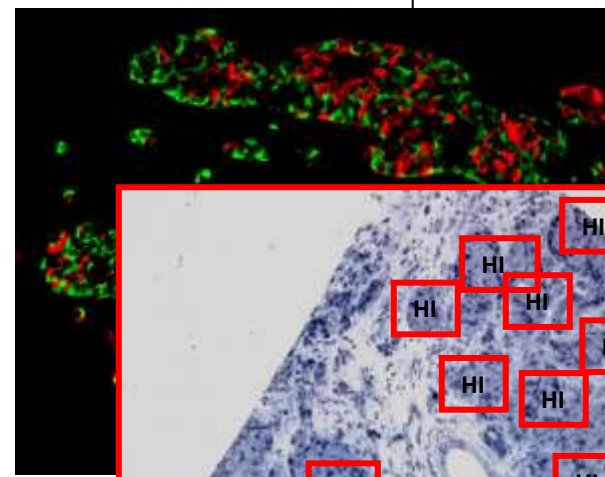
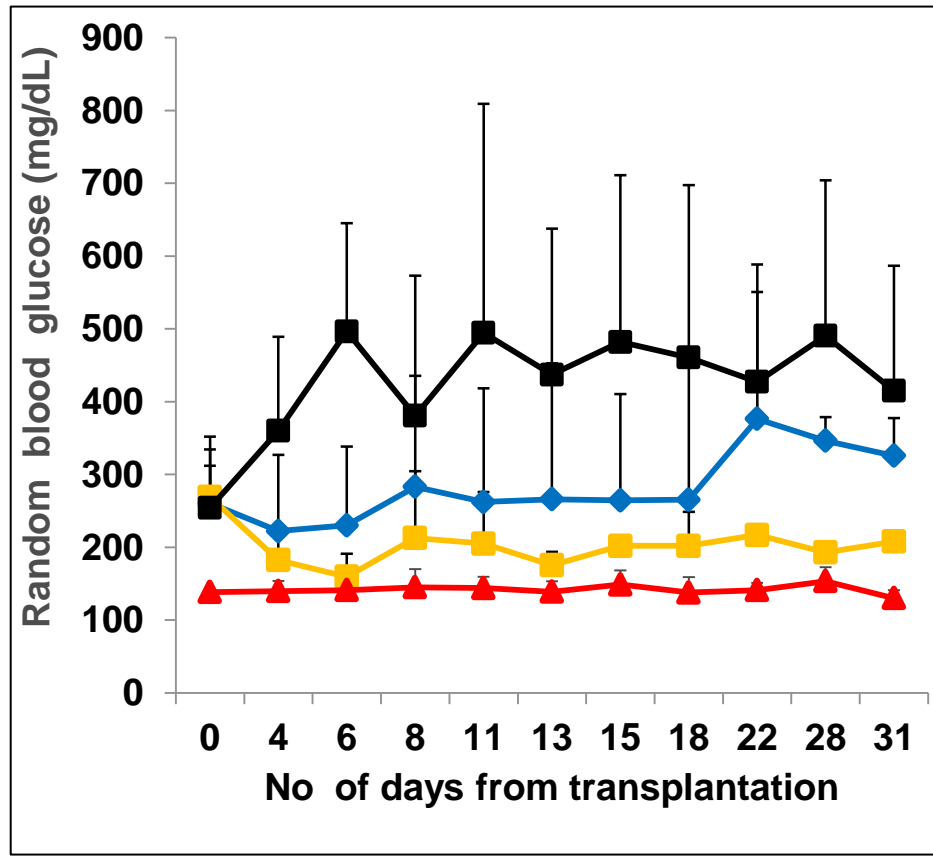
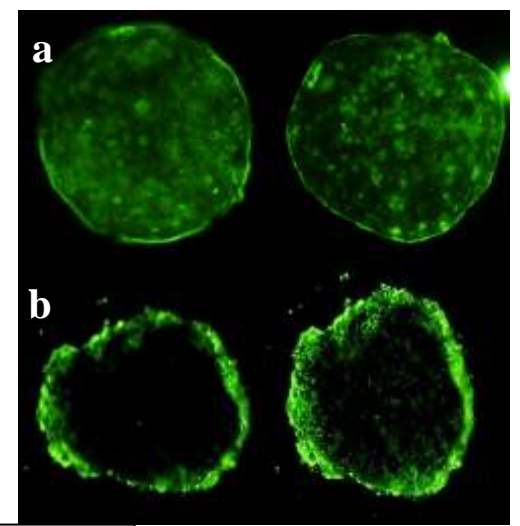


TD 1 islet

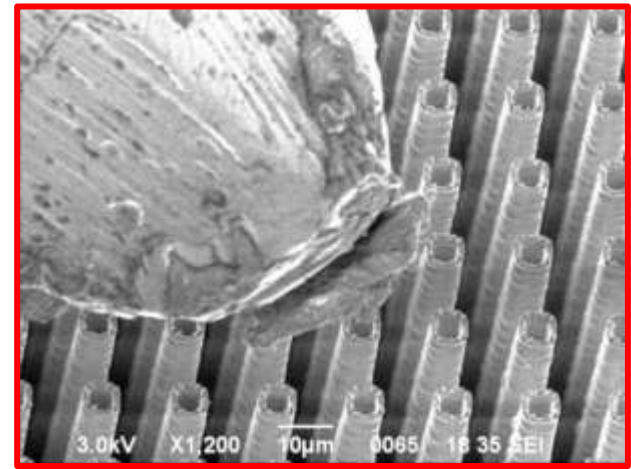
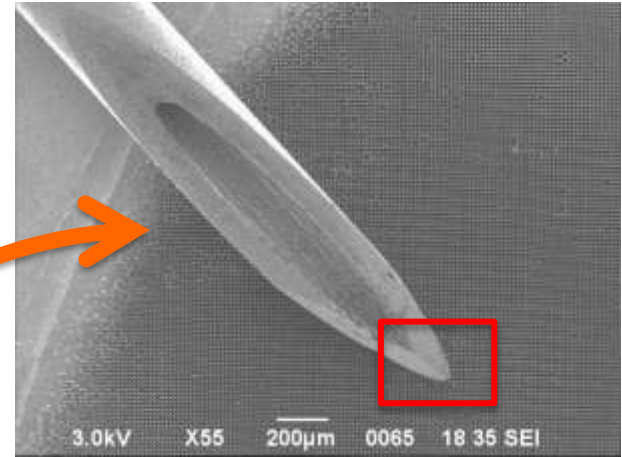




Layer-by-layer nanoencapsulated human pancreatic islets

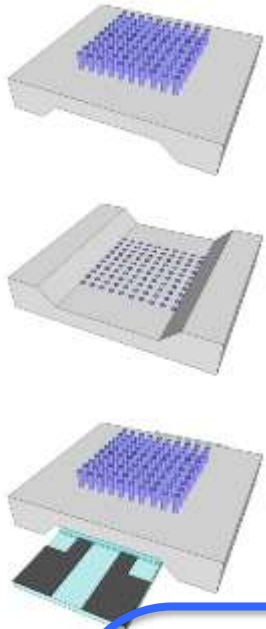


GlucoPen: towards pain-free measurement of glycaemia

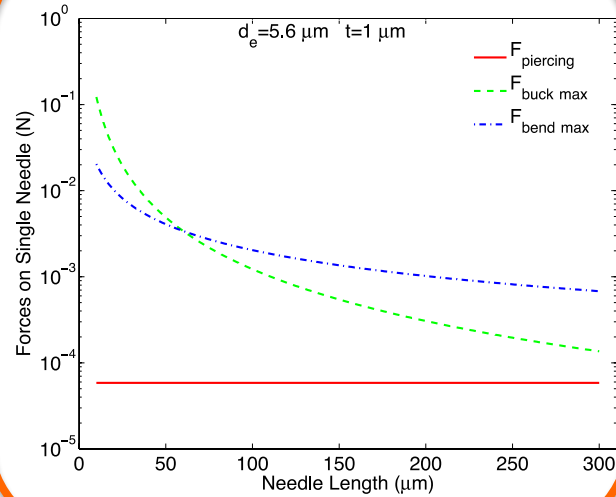


GlucPen makes use of microneedles up to ten times smaller than a human hair

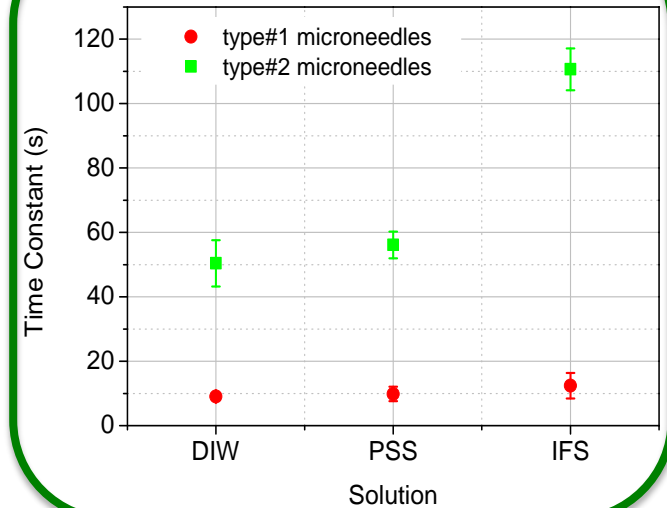
GlucoPen experimental characterization



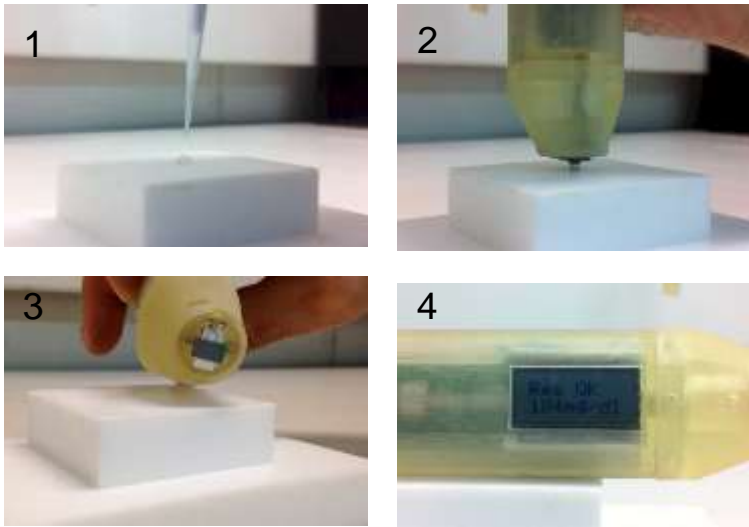
Mechanical Tests



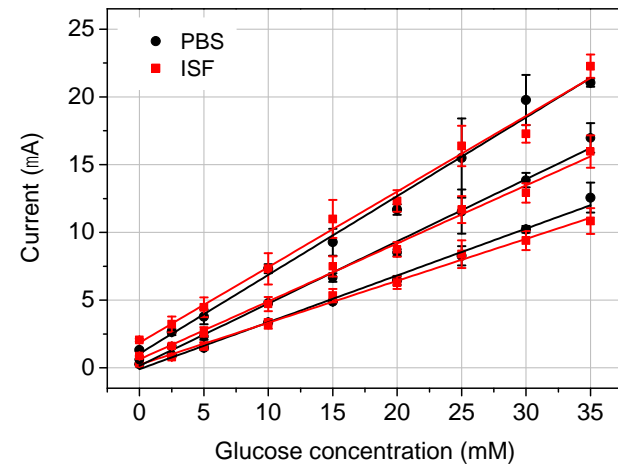
Capillary-action liquid uptake



In-vitro glucose measurements



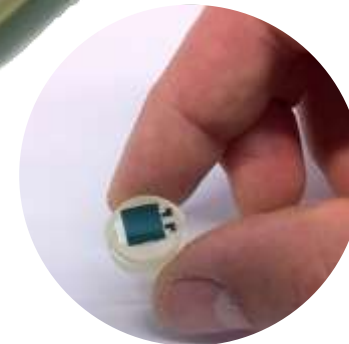
Type#1 Microneedle Biosensor



In-vitro analytical performance of GlucoPen



	Type#1 microneedle-based biosensor
	ISF PBS
Accuracy (A) (measures within $\pm 20\%$)	96% 92%
Linearity (R^2) (0-35 mM)	0.995 0.993
Reproducibility ($\%CV_{av}$)	8.56% 6.37%
Sensitivity (S) ($\mu A/mM$)	0.43 0.46
Resolution (LoD) (mM)	0.3 0.2



Grazie per la
vostra attenzione!!!



*Non voglio arrivare primo;
voglio arrivare da un'altra parte*