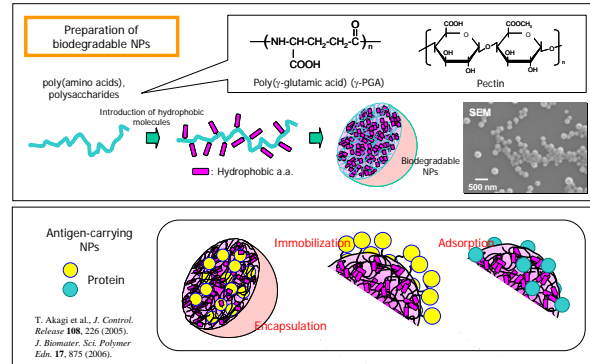


Poly(γ -glutamic acid) nanoparticles as an efficient antigen delivery and adjuvant system to dendritic cells: Potential application to anti-AIDS vaccine

Masanori Baba
Center for Chronic Viral Diseases
Graduate School of Medical and Dental Sciences
Kagoshima University

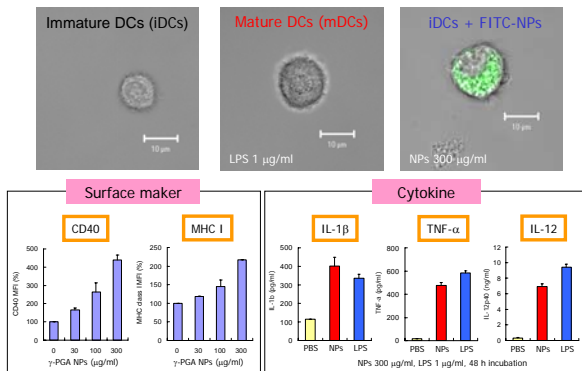
January 10-11, 2008, Santa Clara, CA

Biodegradable nanoparticles



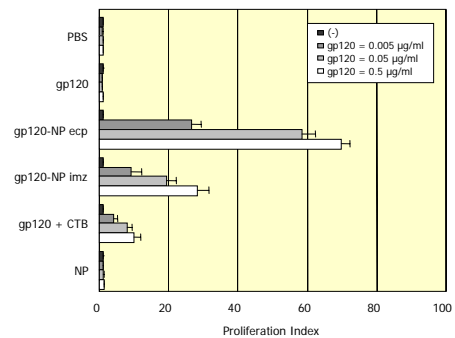
Kagoshima University

Maturation of DCs by nanoparticles



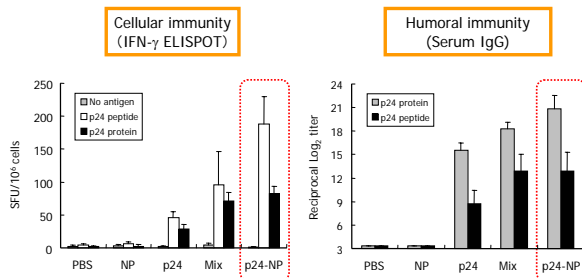
Kagoshima University

HIV-1 gp120-specific T-cell proliferation



Kagoshima University

Immune responses to p24 antigen



X. Wang et al., *J. Med. Virol.* **80**, 11 (2008)

Kagoshima University

Conclusions

- We have created novel **biodegradable** NPs from γ -PGA.
- Various proteins and peptides can be immobilized onto and/or encapsulated into the NPs.
- The NPs act as an efficient **antigen carrier** to DCs.
- The NPs are capable of activating DCs (**immature DCs** \rightarrow **mature DCs**).
- The NPs induce potent **cellular immune responses** to protein antigens, such as gp120 and p24.
- Thus, γ -PGA NPs carrying various HIV-1 proteins and/or peptides may be a great potential as a novel anti-AIDS vaccine.

The present work was conducted in collaboration with Professor Mitsuru Akashi in Osaka University.

Kagoshima University